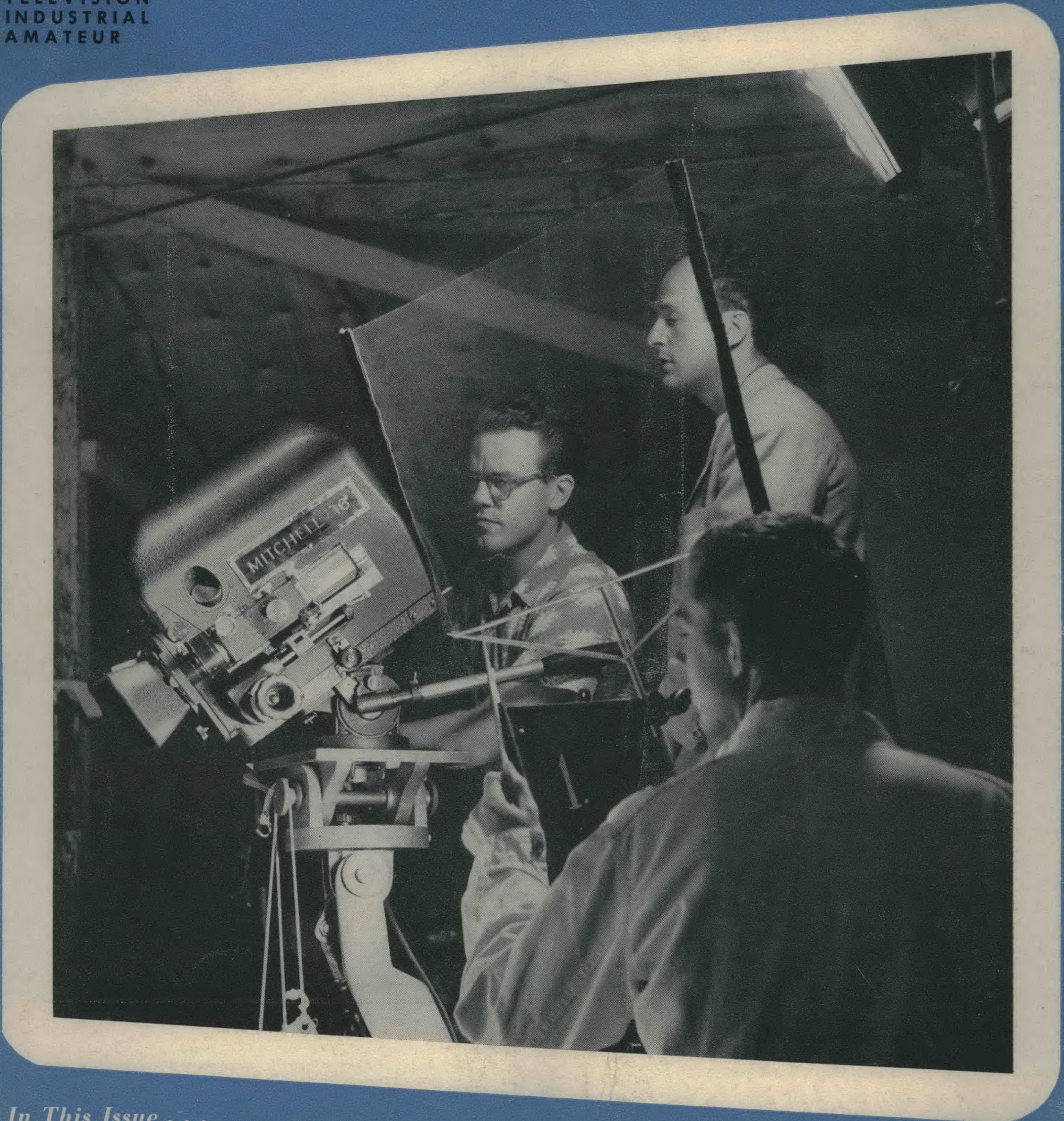
AMERICAN

OCTOBER • 1953

Cinematographer

THE MAGAZINE OF MOTION PICTURE PHOTOGRAPHY

THEATRE
TELEVISION
INDUSTRIAL
AMATEUR



In This Issue . . .

- Gearing Production To CinemaScope
- Variable Wide-screen Projection Lens
- Single-film System for 3-D

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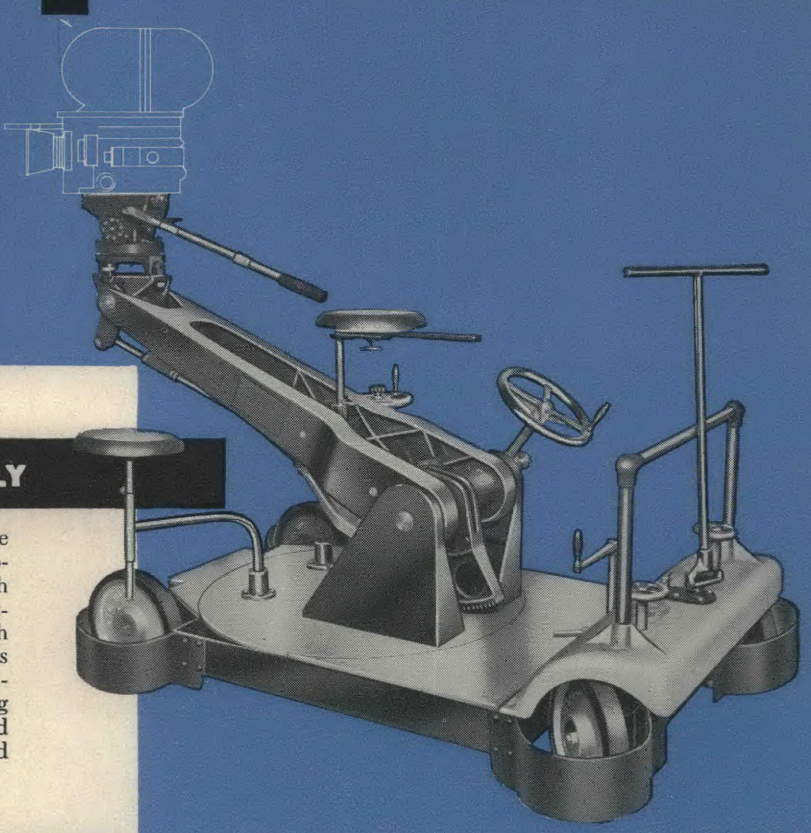
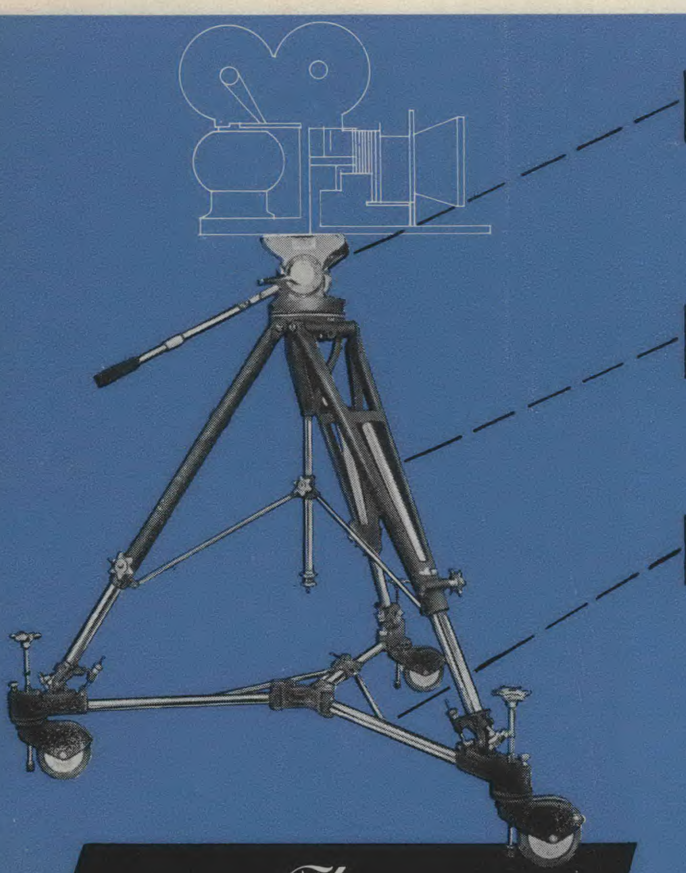


HOUSTON-FEARLESS PANORAM DOLLY

New life! New action! New drama! New interest! . . . are achieved by pictures made with the Houston-Fearless Panoram Dolly. Gives cameras complete mobility, produces smooth pan effects, angle shots, running shots, dolly shots and countless special effects. Raises camera from low to extreme high position smoothly and silently. Dollies in and out of scenes quietly on rubber-tired ball bearing wheels. Dolly track available. Deluxe model can also be moved sideways. Running board attaches to side, if desired. Very maneuverable. Proved completely dependable by leading studios in Hollywood and throughout the world



H-F FRICTION HEAD

Provides smooth, easy panning and tilting of cameras. Pans 360° on ball bearings. Tilts 45° up or down with camera counterbalanced at all times. Variable drag and brake are provided on both pan and tilt. Adjustable handle. Fits Houston-Fearless and other standard tripods, pedestals, dollies and cranes.

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Combines extreme ruggedness, adaptability, rigidity, ease of operation and portability not found in any other tripod. For studio or field use. Levels automatically. Tubular steel legs are easily adjusted for height—lock positively to prevent slipping. Folds compactly. Two sizes: ¾ and full length.

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Gives convenient mobility to tripod-mounted cameras. In the studio, it offers a rapid means of moving camera. Wheels swivel for maneuverability or can be locked parallel for straight line tracking. In field, provides easy means for positioning camera. Strong, lightweight tubular steel. Folds compactly.

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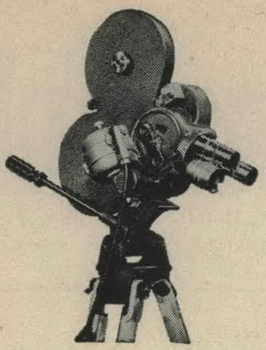
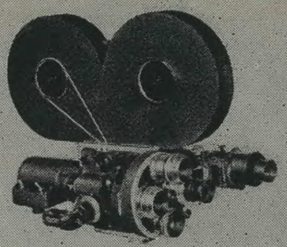
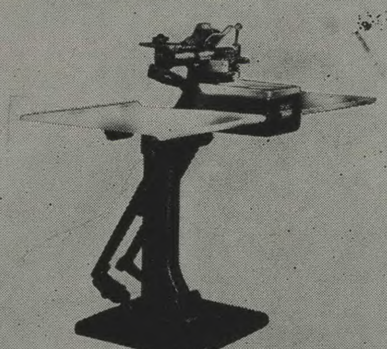


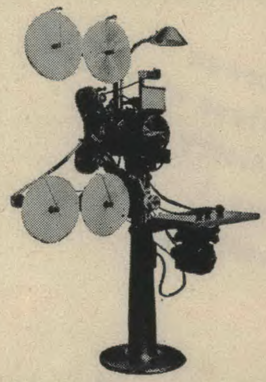
PERFECT PERFORMER. 16mm 70-H camera. Seven film speeds, governor controlled—three-lens turret with positive-type viewfinder system—shutter stabilizer—hand crank, rewind knob—adapted for external magazine and electric motor.



TRUE PROFESSIONAL. 2709-Special. 16mm adaptation of the 35mm camera long popular with Hollywood film studios. Meets the needs of the television field. Four-lens turret accommodates all TTH Speed Panchrotal lenses. Famous B&H fixed-pilot-pin film movement. 170° adjustment shutter with automatic or manual dissolve. 200-, 400-, and 1000-foot B&H 35mm magazines may be adapted. 35mm version also available, Model 2709-D.



FAST, ACCURATE SPLICER. Automatic Film Splicing Machine. Built to very close tolerances to give quick, clean, accurate splices, strong as the film itself! Speedy operation means economy and efficiency. Splices negative or positive 8mm, 16mm and 35mm film.



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AMERICAN

Cinematographer

THE MAGAZINE OF MOTION PICTURE PHOTOGRAPHY
PUBLICATION OF THE AMERICAN SOCIETY OF CINEMATOGRAPHERS

ARTHUR E. GAVIN, *Editor*
EMERY HUSE, *Technical Editor* GLENN R. KERSHNER, *Art Editor*
Circulation, MARGUERITE DUERR
EDITORIAL ADVISORY BOARD: Fred W. Jackman, John Arnold, Arthur Edeson, Lee Garmes, Charles Rosher, Leon Shamroy, Fred Gage, Dr. L. A. Jones.

Editorial and Business Office: 1782 N. Orange Dr., Hollywood 28, Calif.
Telephone: HOllywood 7-2135

VOL. 34 OCTOBER • 1953 NO. 10

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●

ON THE COVER

UNIVERSITY of Southern California Department of Cinema students in a tense moment filming a closeup for "Let Me See," 16mm color and sound documentary which recently won for the University the Screen Producers Guild Gold Award medallion in the SPG's 1953 Intercollegiate Film Awards. From left to right are Bob Keifer, assistant cameraman; Herbert Skoble, director; and Harry Dorsey, grip, holding scrim. Picture was filmed almost entirely with the University's Mitchell "16" camera. For his achievement in directing the picture, Skoble was presented with duplicate award by the Guild. His story on making the film begins on page 482, this issue.

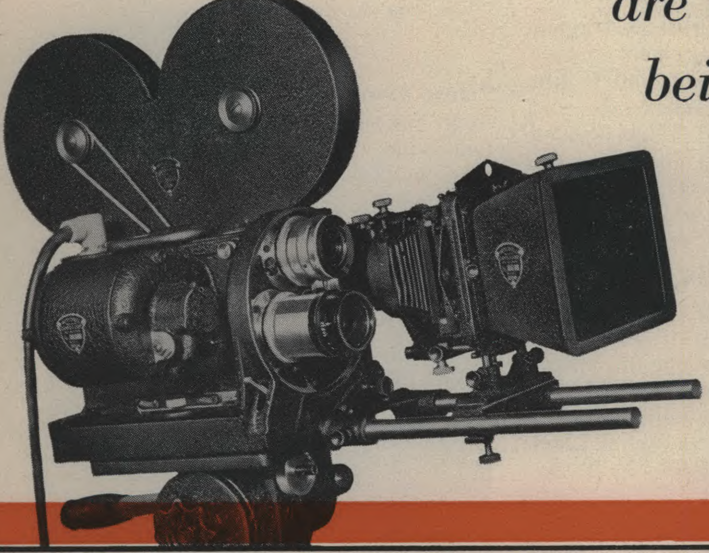
AMERICAN CINEMATOGRAPHER, established 1920, is published monthly by the A. S. C. Agency, Inc., 1782 N. Orange Dr., Hollywood 28, Calif. Entered as second class matter Nov. 18, 1937, at the postoffice at Los Angeles, Calif., under act of March 3, 1879. SUBSCRIPTIONS: United States and Pan-American Union, $3.00 per year; Canada, $3.00 per year; Foreign, $4.00. Single copies, 25 cents; back numbers, 30 cents; foreign single copies, 35 cents; back numbers, 40 cents. Advertising rates on application. Copyright 1953 by A. S. C. Agency, Inc.

IMPORTANT ANNOUNCEMENT

re: the *Mitchell* 16mm Professional Camera

IMMEDIATE SHIPMENTS

are currently being made



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Camera Corporation,
for the first time
in history,
now offers you
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on receipt
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There is no substitute for a heritage of GREAT ENGINEERING. No 16mm motion picture camera made anywhere in the world can match the technical perfection which a Mitchell 16 brings to your film. Each 16mm camera has the same supreme custom workmanship and Mitchell's exclusive, positive operation that is today world-famous ... wherever truly professional films are made.

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ARRIFLEX

35mm
Model 11

A TRULY GREAT CAMERA

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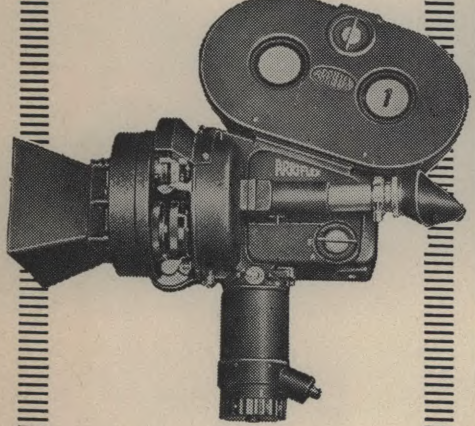

For tough and trying assignments, ARRIFLEX 35 is in a class by itself. Reflex focusing through photographing lens while camera is operating—this is just one outstanding ARRIFLEX feature.

Equipped with bright, right-side-up image finder, 6½ x magnification. Solves all parallax problems. 3 lens turret. Variable speed motor built into handle operates from lightweight battery. Tachometer registering from 0 to 50 frames per second. Compact, lightweight for either tripod or hand-held filming. Takes 200′ or 400′ magazine. Write for free folder.

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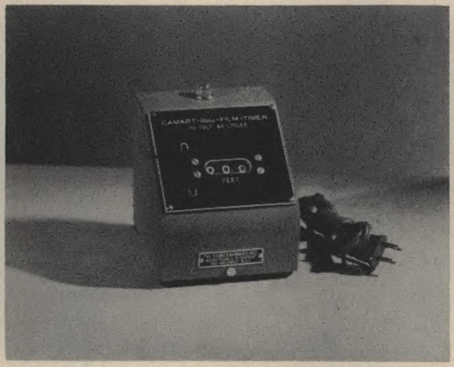
WHAT'S NEW

in equipment, accessories and service

Electric Footage Counter—A new single model electric footage counter for either 16mm or 35mm film is announced by The Camera Mart, Inc., 1845 Broadway, New York 23, N. Y. Housed in attractive metal cabinet finished in gray crackle enamel, new unit contains a precision footage meter driven by a synch motor. It may be easily interlocked with a projector, recorder or any other film instrument requiring accurate measurement of footage. Further uses will be found in film editing, script timing, rehearsals, etc., for motion pictures and TV. Complete with neon light current indicator and extension cord, price is $75.00. Literature is available.



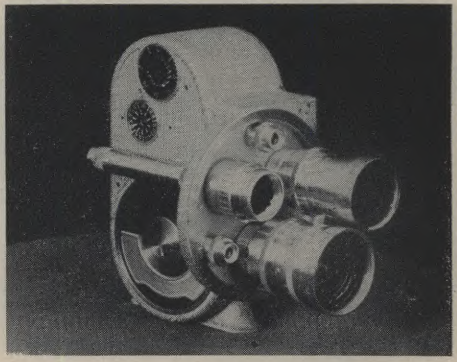
Projection Lenses—A new series of f/1.8 Super-Cinephor projection lenses designed to produce maximum brightness, contrast and sharpness, edge-to-edge, on all types of professional movie screens is announced by Bausch & Lomb Optical Company, Rochester, N. Y. According to B & L, tests have shown that the new lenses, without sacrificing resolution and illumination in the screen's center, will greatly enhance these qualities on regular 2-D screens and also on the new types for CinemaScope, other wide-screen processes, and 3-D. The new lenses employ five different kinds of optical glass; these, combined with a new design formula, eliminate color absorption and transmit the full color and brightness of image.

The lenses are available in a wide range of focal lengths, which will be expanded steadily in the coming months, the company reports.

35mm — 16mm Lab Services — A wide range of film laboratory service, including direct reversal blowup prints from 16mm to 35mm; color blowup negatives, and blowup separation negatives are available from Filmeffects of Hollywood, 1153 No. Highland Ave., Hollywood 38, Calif., who long have specialized in servicing the 16mm color film producer. Company made the 35mm blowups from original 16mm Kodachrome for RKO-Radio Pictures' "The Sea Around Us."

"New Look" For Filmos—A "new look" for two Bell & Howell 8mm spool-load cine cameras (the 134-V single-lens, and the 134-TA tri-lens) is announced by the manufacturer.

Cameras are now available in a new fawn metallic finish to match their companion piece, the B&H Regent 8mm projector. In addition, the standard ½-in. f/2.5 lenses now come with click stops for easier, surer setting. Camera prices have not been increased; the 134-V sells for $89.95, the 134-TA (pictured) sells for $129.95, including F. E. tax.

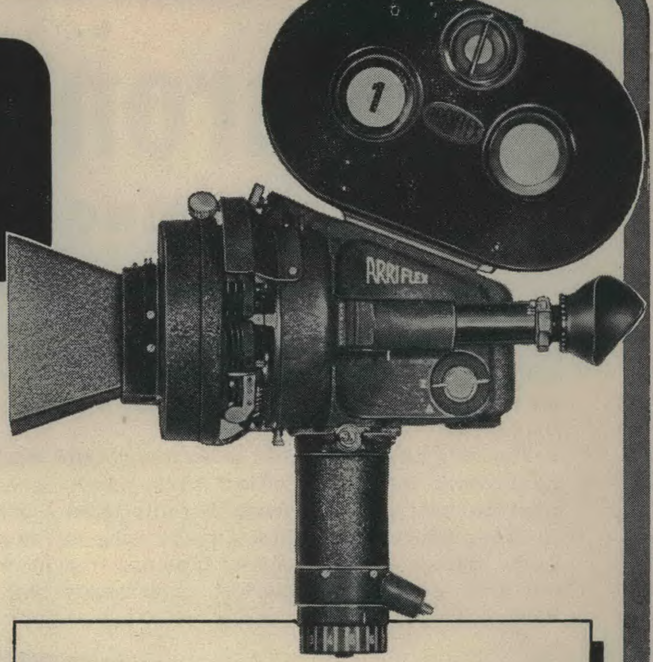


Sync Motor Stabilizer—A new power amplifier of greatly increased accuracy and frequency range than any heretofore available has been announced by

(Continued on Page 468)

☆ ARRIFLEX 35

MODEL II



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- Reflex focusing through taking lens, even when camera is running.
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- No parallax or other finder problems.
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- 3-lens turret.
- Quick change geared film magazines (200 and 400 feet). No belts to connect.
- Variable speed motor built into handle.
- Tachometer registering from 0 to 50 frames per second.
- Compact, lightweight.
- Equally adaptable for tripod or handheld filming.
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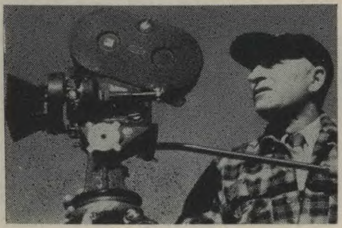

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Writes Mr. Olsen:

". . . In my many years of experience behind the camera, I have filmed a multitude of subjects all over the world, and wherever I went, my Arriflex went with me.

My most recent project was a sports film, shot in the Hawaiian Islands, the first ever to be photographed in the new ultra-wide dimension . . . VISTARAMA. I used my Arriflex exclusively.

If I were asked to give one reason for preferring the Arriflex, I would say portability. The Arriflex is power driven and it permits through-the-lens focusing and viewing. It does everything that in the past would have required cumbersome equipment. Yet, it is light and rugged and can be easily carried into the remotest and most inaccessible locations."

Available at leading dealers.
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28mm f/2 Schneider Xenon*	90mm f/3.5 Kilar
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75mm f/2 Schneider Xenon*	150mm f/3.5 Kilar
*With Follow-Focus Grips.	300mm f/5.6 Kilar
	400mm f/5.6 Kilar

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LENS EXTENSION TUBE for close-up filming and cinemacrography

HI-HAT for mounting Arriflex 35 on standard tripods

SHOULDER-POD for vibration-free, hand-held filming

BATTERY — 16 Volt, lightweight, non-spill, with carrying case and shoulder strap

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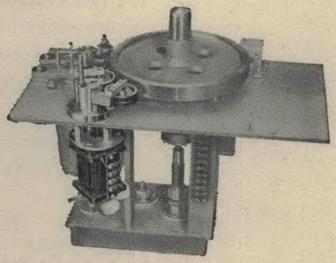
The Fairchild Model 141 generates control track for picture synchronous recording, "mixes" track simultaneously with program material at 30 db down. No interference with immediate playback. Effect substantial savings by using only the good "takes". Sound studios will process your tape and transfer to film, or you can play tape back in perfect synchronism with a Fairchild Pic-Sync Tape Recorder.

Fairchild Model 141
Control Track Generator
is compact, portable—
5¼″ high, 11¾″ wide,
11¾″ deep; weight 10¼ lbs.
$200 f.o.b. Whitestone, N. Y.

World's Finest
Professional Tape Recorder—
FAIRCHILD Model 126



Fairchild Model 126
Professional Tape Recorder (left)
with patented Syncroll Drive
and Pic-Sync Attachment (above)
installed within console.

No other Tape Recorder offers all these EXCLUSIVE FEATURES!

- SYNCROLL DRIVE insures exactly synchronous tape speed, gives accurate program timing, on-pitch reproduction.
- PIC-SYNC ATTACHMENT (optional) corrects for tape stretch, shrinkage, provides absolute lip-synchronous timing.
- AUTOMATIC FRAMING CONTROL (with Pic-Sync) brings recorder into frame with projector or other equipment, regardless of difference in starting times.
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- HIGHEST SIGNAL-TO-NOISE Ratio of any tape recorder assures minimum distortion in recording and dubbing.

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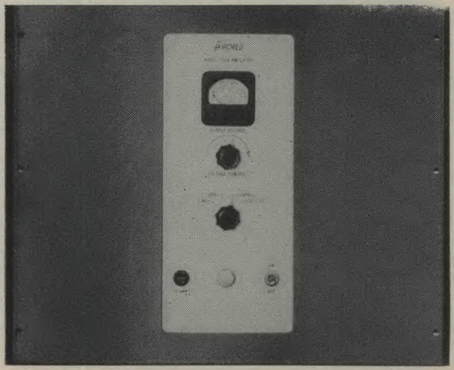
WHAT'S NEW

(Continued from Page 466)

Fairchild Recording Equipment Corp., Whitestone, N. Y.

Basic function of new unit is to stabilize the speed of a synchronous motor over a broad range of frequencies, by means of audio frequency control, independent of commercial powerline variations. Experimental and practical applications include magnetic recorders, turntables, timing devices, high speed cameras, servo systems, etc. Unit is designed for continuous operation, and is packaged to mount in standard 19″ rack, occupying up to 15¾″ of rack space.



Complete technical details and other data may be had by writing the company and mentioning *American Cinematographer*.

Arriflex Repair Service—Complete repair service for Arriflex cameras is now offered by Camera Equipment Company, 1600 Broadway, New York City, distributors of the camera.

Film and Slide Viewer—A unique viewer having a large 10½″ x 10″ screen, and features interchangeable lenses that provide a range of magnification from 7½ to 14, is announced by the D-H Instrument Co., Palo Alto, Calif. The portable table model may be used to view 35mm and 16mm films, or 2″ x 2″ slides. The large viewing screen makes it especially ideal for viewing motion picture film, and is especially suited to needs of 16mm film makers and editors. More complete details may be had by writing the company at P.O. Box 205, Station A, Palo Alto, and mentioning *American Cinematographer*.

Recording Magazine—*Tape and Film Recording*, a new bi-monthly magazine devoted to all aspects of magnetic recording has been announced by the publishers, Mooney-Rowan Publications, Severna Park, Maryland.

Kern shows what the *Well Dressed* 16mm Turret wears

A job always turns out better when you're dressed for the work at hand . . . and the same goes for cameras, too! Just deck out your turret with a wardrobe of fine Kern lenses and see what a big improvement the exactly right lens can make.

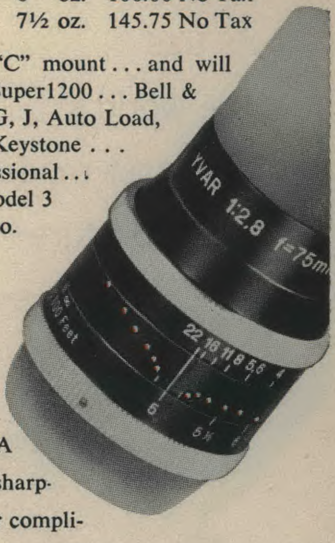
Kern offers you a full range of top-performing lenses, wide-angle to telephoto, all Swiss-made to the highest optical standards. They've every worthwhile feature of all good lenses — click stops, sunshades, hard coating — plus time-saving *Visifocus* (described below) that you'll find in Kern alone.

Dress your camera in the same Kern lenses that have proved so outstandingly successful on famous Bolex cameras. If your camera has a standard "C" mount, Kern lenses are "ready to wear."

Try these Kern Lenses for size . . . price . . . performance

	LENGTH	*APERTURE*	*MOUNT*	*WEIGHT*	*PRICE*
*Yvar	16mm	F:2.8 to F:22	"C"	1¾ oz.	$ 76.50 Inc. FET
Switar	25mm (1")	F:1.4 to F:22	Bolex only	5 oz.	178.50 Inc. FET
*Switar	25mm (1")	F:1.5 to F:22	Bolex only	5 oz.	122.00 Inc. FET
*Pizar	26mm (1")	F:1.9 to F:22	"C"	5 oz.	94.25 Inc. FET
*Yvar	75mm (3")	F:2.8 to F:22	"C"	5¼ oz.	94.50 No Tax
*Yvar	100mm (4")	F:3.3 to F:22	"C"	6 oz.	106.00 No Tax
*Yvar	150mm (6")	F:4 to F:32	"C"	7½ oz.	145.75 No Tax

The turrets of these 16mm cameras use a "C" mount . . . and will accept Kern lenses: Auricon Pro, Cine Voice, Super1200 . . . Bell & Howell 7 (above serial no. 54090), 70 D, E, F, G, J, Auto Load, Auto Master . . . Bolex . . . Grover GSAP . . . Keystone . . . Maurer . . . Morton Soundmaster . . . Nord Professional . . . Pathe Super 16 . . . Revere 16 and 26 . . . Victor Model 3 above serial no. 36885, Model 4 above serial no. 22026, Model 5 above serial no. 52151.

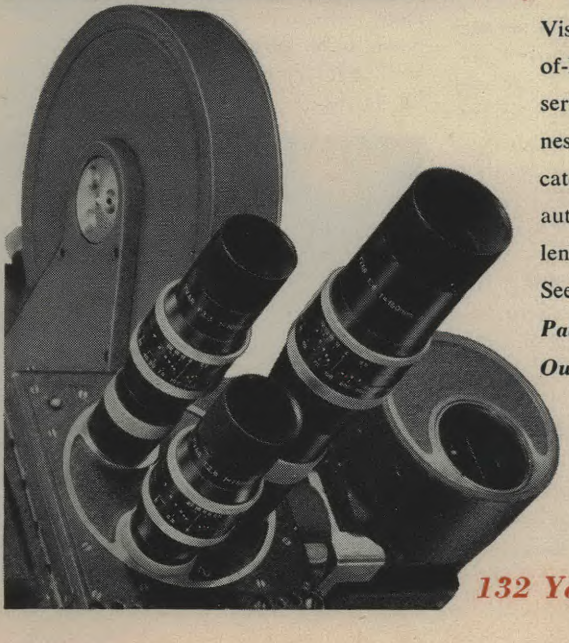


*Only Kern Lenses have *Visifocus*

Visifocus is an entirely new type of Depth-of-Field indicator . . . a Kern-Paillard exclusive. A series of dots automatically indicate the zone of sharpness at any lens opening. Eliminates the need for complicated depth-of-field charts because the calibrated signals flash up automatically between the diaphragm scale and the focusing scale of the lens mount.

See your Bolex franchised dealer.

Paillard Products, Inc., 100 Sixth Ave., New York 13, N. Y.
Outside U. S. A. write to Paillard, S. A. Ste. Croix, Switzerland



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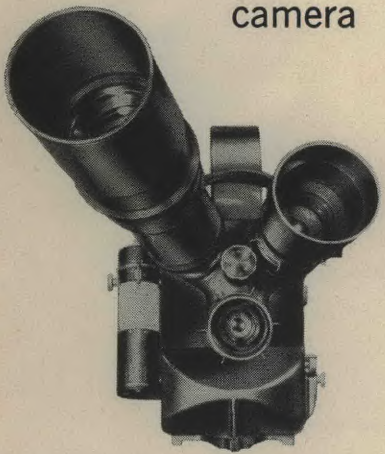
a basic tool
is so improved
as to add
a new dimension
to its use…
the world's
most modern
motion picture
camera



camerette
patents Coutant-Mathot
manufactured by Eclair, Paris

Hollywood
Bulletin Board

WM. A. CUSHMAN

WILLIAM A. CUSHMAN, ASC, sales representative of duPont's Photo Products division, has been transferred to company's Hollywood office to assume post vacated through recent death of Peter Shamray, who was also a member of the ASC. Cushman joined duPont in film coating department, rose rapidly in a series of promotions to his present position. He is widely known among Hollywood cinematographers and executives of the major studio camera departments. He has been an associate member of the American Society of Cinematographers since June, 1951.

•

HARRY STRADLING, ASC, only director of photography on contract with Samuel Goldwyn, has had his contract renewed for another year.

Presently conducting cinematographic tests on the new Todd-AO super-wide-screen process, Stradling is slated to direct the photography of "Oklahoma" in Todd-AO, to be produced by Rogers and Hammerstein. Production filming is scheduled to begin in mid-1954.

•

GEORGE FOLSEY, ASC, after having prepped his 14-year-old son, George, Jr., for the event, missed out on seeing Junior win the Bel Air Junior Golf Championship last month. While Junior was making remarkable drives and putts to win the championship, Senior was across town filming another group of juniors in scenes of a Little League ballgame for MGM's "Executive Suite."

Folsey starts his camera rolling immediately on another MGM picture—"Panther Squadron 8."

•

JOHN ARNOLD, ASC, MGM's executive director of photography, is readying his new wide-screen camera for general production. Camera, which has film travelling horizontally instead of vertically, provides for making negatives having wide-screen aspect ratios of various sizes, i.e., with 6, 8 or 10 sprocket holes.

Advantage claimed for new type camera is that the wide area picture secured, when reduced down to standard or conventional 35mm format via optical printing, minimizes if not eliminates entirely any film grain—a particular ideal feature for color.

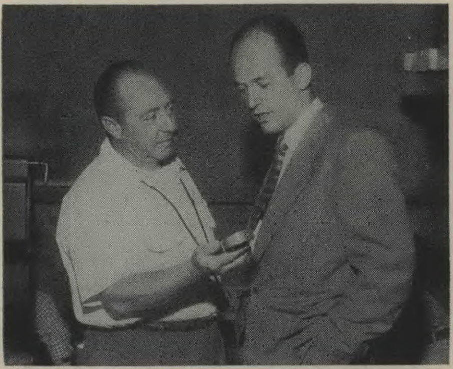
According to Arnold, camera is not new, but is based on his original camera of same type which he built over 20 years ago.

•

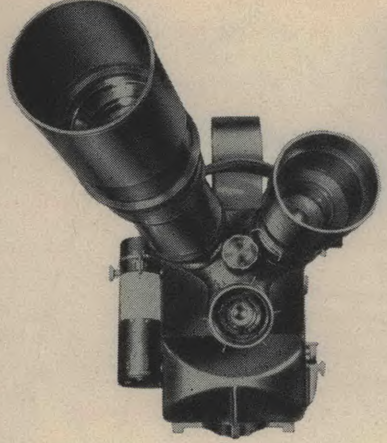
MEANTIME — two other Hollywood studios are working with cameras of same type. Gil Morgan, head of Morgan's Camera Shop in Hollywood, gave impetus to activity in this direction recently when he dug up an old wide-aperture camera in his warehouse, converted it for lateral film travel, and showed it to a number of studios. Camera is said to be one developed by Fox studio technicians a decade ago, then shelved. Morgan bought two when studio offered them for sale as surplus equipment. One camera reportedly is being used by a major studio on one of its top-budget productions.

•

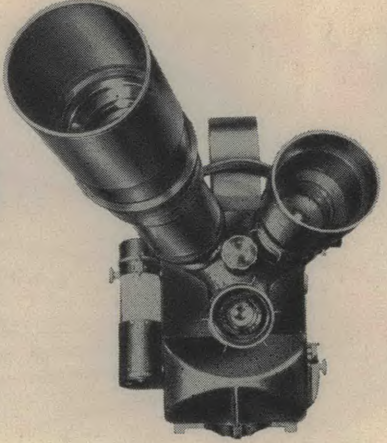
THE SIGNAL CORPS' school at Ft. Monmouth, New Jersey, urgently needs instructors in photography. Positions pay from $3,410 to $5,060 a year. Complete information may be obtained at most U.S. postoffices, or from U. S. civil Service Commission, Washington 25, D. C.



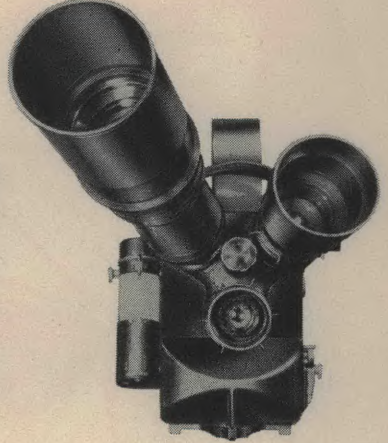
DIRECTOR of photography William Snyder, ASC, explains use of color meter to visiting Herbert Skoble, college student whose recent 16mm production won him an award plus chance to study cinematography in various major studios.



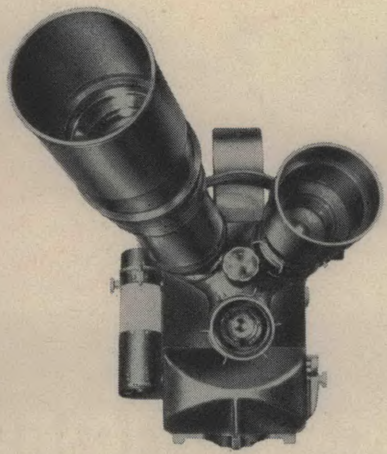
35 and 16/35 mm



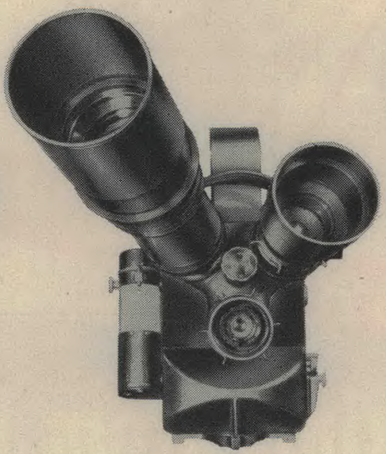
reflex viewing



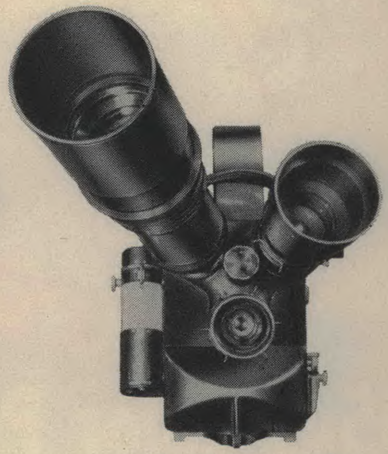
divergent turret



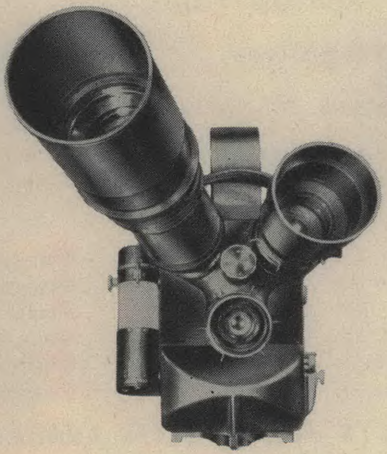
40° to 200° adjustable shutter



lightweight – 14 lbs.



100′ to 400′ magazine



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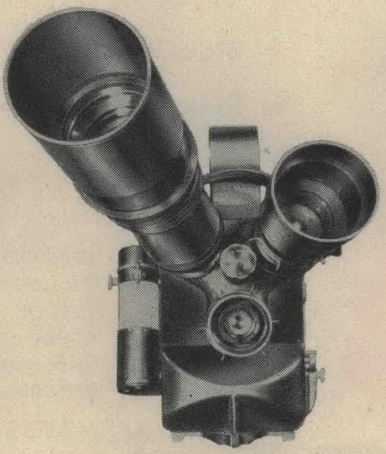
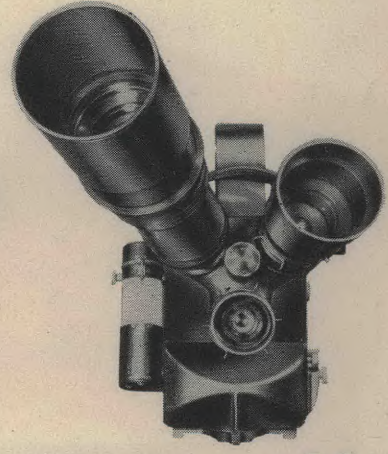


dovetail mounting



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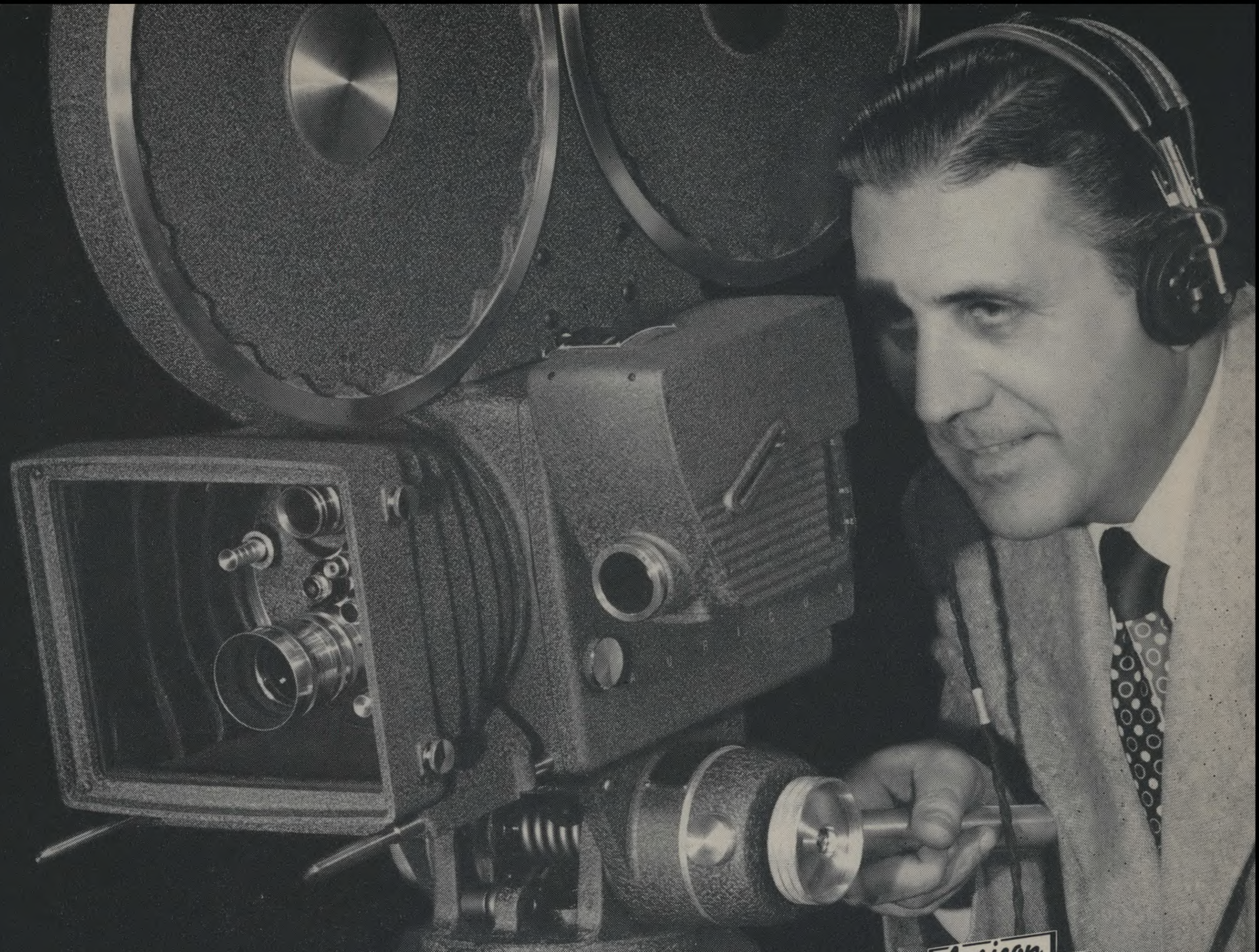

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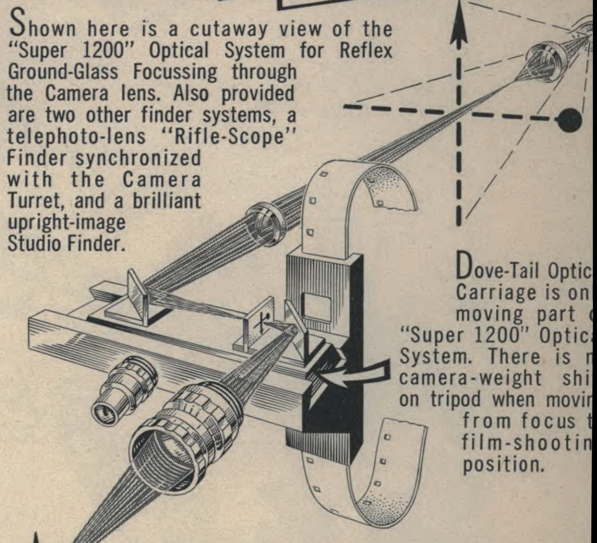

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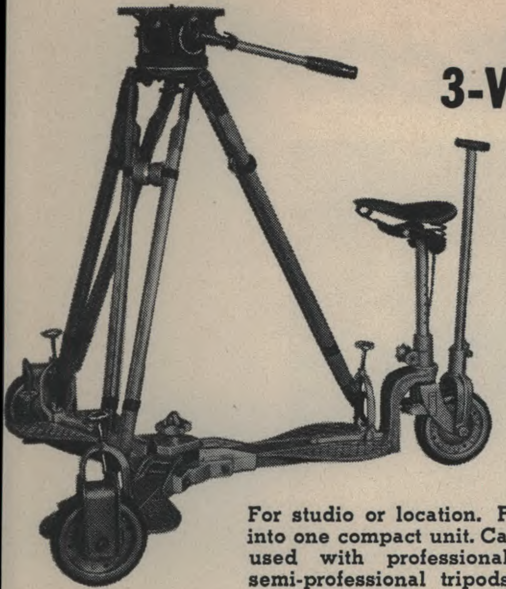

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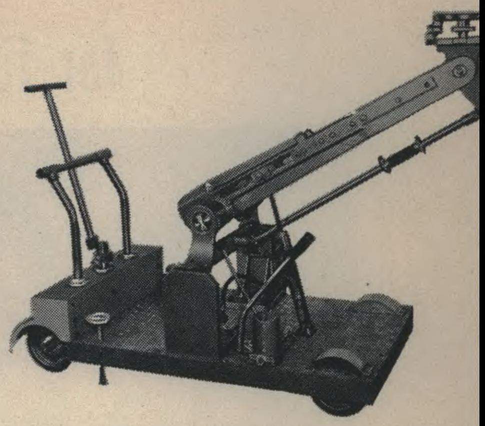

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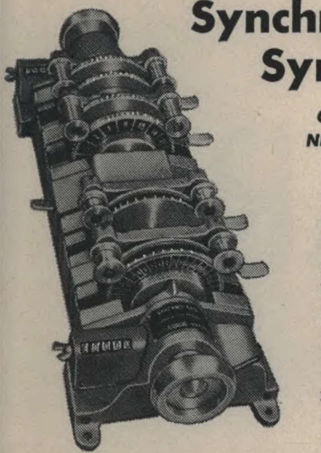

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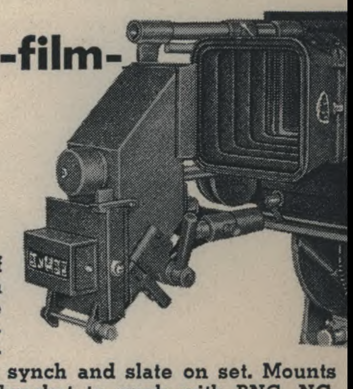

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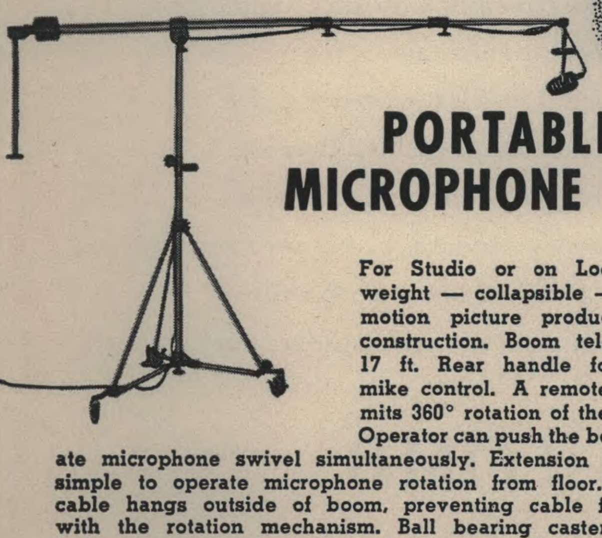

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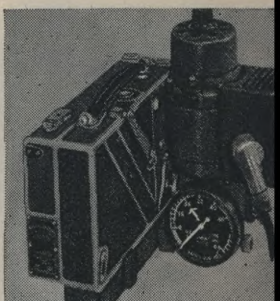

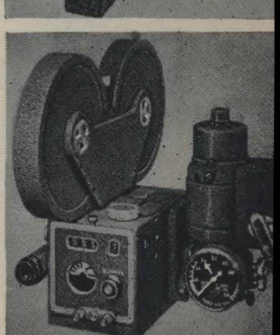

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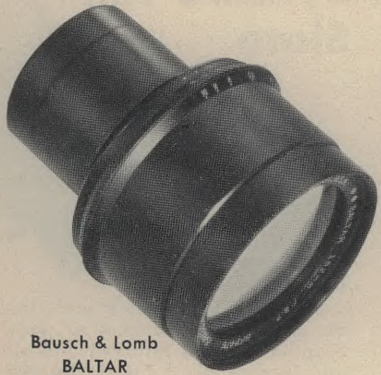

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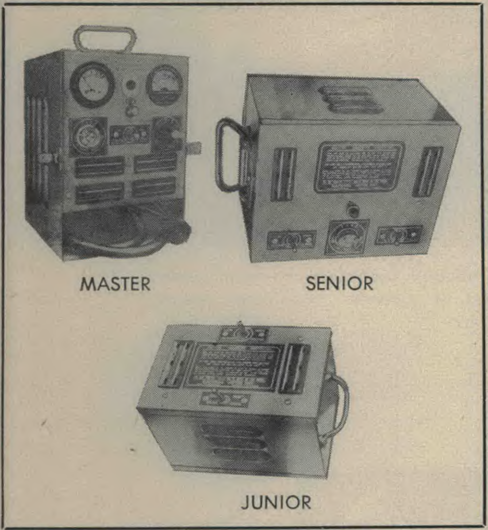
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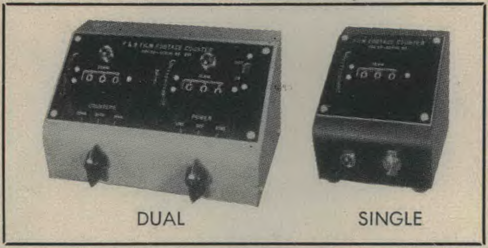
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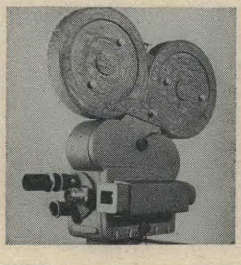

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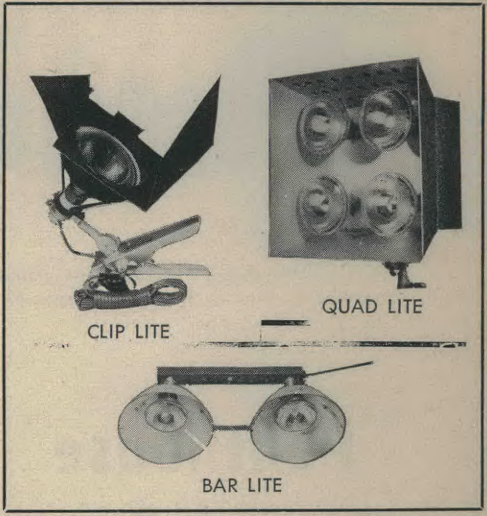
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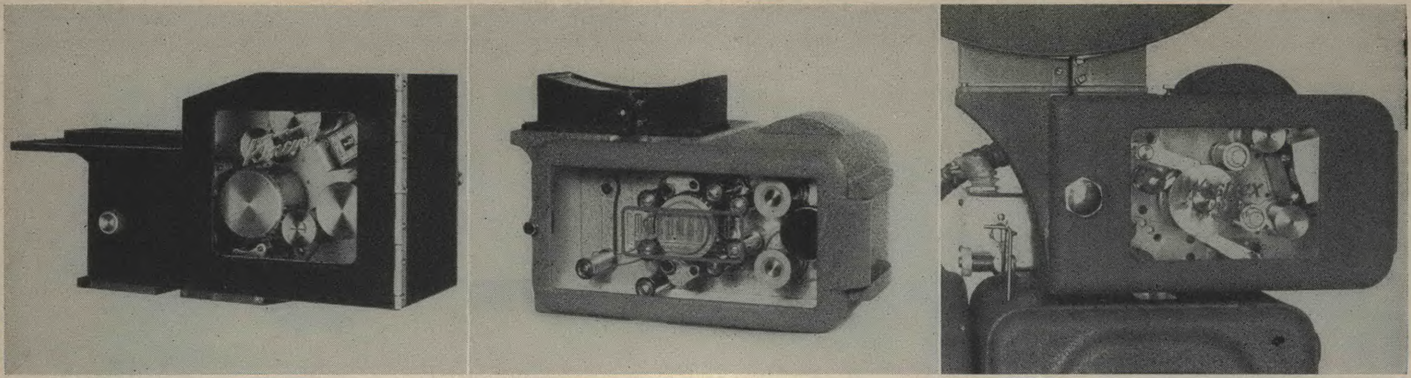

FIG. 1.—"Penthouse" stereophonic sound reproducers now being marketed by Kinevox (left), Magnasync (center) and Westrex (right). Units are mounted on standard theatre projectors, between upper film magazine and regular head of projector, as shown above.

"Penthouse" 4-track Sound Reproducers

Auxiliary sound heads solve problem of reproducing 4-channel magnetic sound from composite CinemaScope prints.

By RALPH LAWTON

THE FINAL STEP in the fabrication of Twentieth Centrury-Fox CinemaScope for the screen was the development of a successful method of putting the system's four sound tracks on the picture film, thereby eliminating need for a separate film for the sound. Actually, two steps were involved: 1) working out a suitable method for putting the magnetic sound tracks on the picture film, and 2), developing equipment for reproducing the four tracks by standard 35mm theatre projectors.

The four-track system was developed by Earl I. Sponable, director of research for TCF studios. The new method, Sponable says, means a considerable saving in the inspection, processing and shipping of CinemaScope films, in addition to lowering projection booth costs, and eliminating millions of feet of film stock which otherwise would be required for separate sound tracks.

To gain the necessary space on 35mm film for the additional tracks, TCF engineers narrowed the width of the sprocket holes in 35mm film from .110 to .078 of an inch, and at the same time also whittled down the size of the sprocket teeth to corresponding dimensions. (See Fig. 2.) Making this step possible was the use of acetate film, which now replaces the old nitrate film for CinemaScope prints. Nitrate film shrank in laboratory processing; the new acetate film is stable.

In all, many months of engineering work went into this phase of the system's development. Both Eastman Kodak Company and Technicolor Corp. had to provide special film stock; new gears for projectors and cameras had to be made and installed; and many changes had to be worked out in laboratory practice.

The second step had as its aim to make it as easy as possible for the average theatre owner to convert his equipment to reproduce the sound from the four-track CinemaScope prints. For this, TCF engineers conceived an auxiliary sound head which they termed a "penthouse" and installed the prototype between the upper film magazine and the regular head of a standard 35mm projector. Leading equipment manufacturers were asked to manufacture the "penthouse" sound head for exhibitors. Today, such firms as

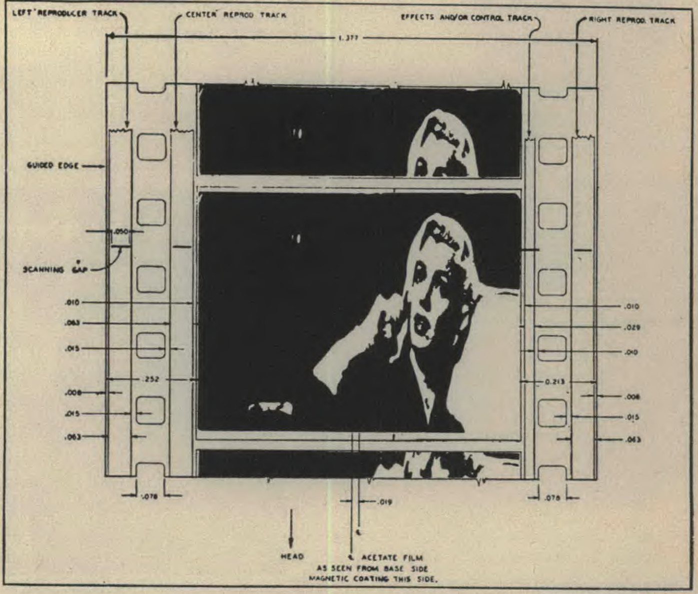

FIG. 2—How the four magnetic tracks for stereophonic sound are arranged on CinemaScope film. Narrowed sprocket holes make possible the additional tracks without reducing picture area.

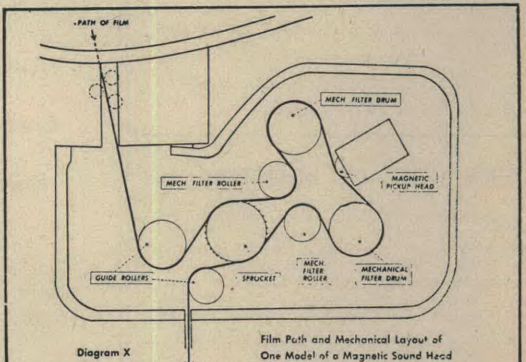

FIG. 3—Film path and mechanical layout of one model of "penthouse" magnetic sound head.

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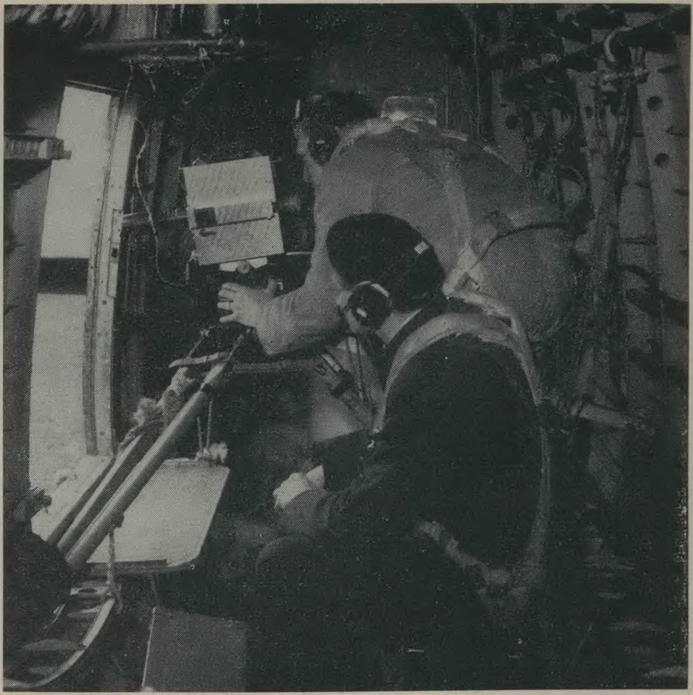
Shooting A Royal Air Force Training Film

Some of the problems encountered in getting authenticity in a film for instructing pilots in emergency procedure.

By J. R. F. STEWART

Stewart Films, England



FILMING aerial scenes through the open door of a Lancaster bomber. Pushbutton on front of the Newman-Sinclair camera operated signal light in pilot's compartment to relay cues to him for action.

To point up the importance of knowing exactly what to do in an emergency and to explain to Royal Air Force pilots the important organization that exists on the ground to help them in time of need, the British Air Ministry recently commissioned Stewart Films to produce a 2-reel training film —"The V.H.F. D/F Emergency Service in the United Kingdom."

In many ways, this was an ideal film subject for us. Unlike so many training films, which are necessarily crammed full of detailed instruction, the only message to be taught by this film was "Know your emergency procedure!" As the film's audiences were to be pilots only, a knowledge of normal flying procedure could be assumed.

Most fliers are optimists—maybe they have to be—and faster-than-sound jet pilots of Royal Air Force are no exception. But optimism has its dangers. Many pilots hearing of a "prang" (accident to you readers) invariably feel "It can't happen to me!" And even the most experienced pilots sometimes fail to keep up to date with their correct emergency procedure. The average jet craft can fly for about an hour without re-fueling, yet pilots often return to base with only a scant 15 or 20 minutes' fuel left in the tanks. In such emergencies if anything should go wrong, or if the pilot is not sure of his exact position, minutes become precious, indeed.

So we began our film at this point—with a pilot in trouble. The film opens with shots of an aircraft in flight above dense cloud. It soon becomes obvious to the experienced audience that the pilot is having difficulty, and such an audience can be expected to follow closely all that the troubled pilot does in attempt to save his craft. When he fails and the aircraft

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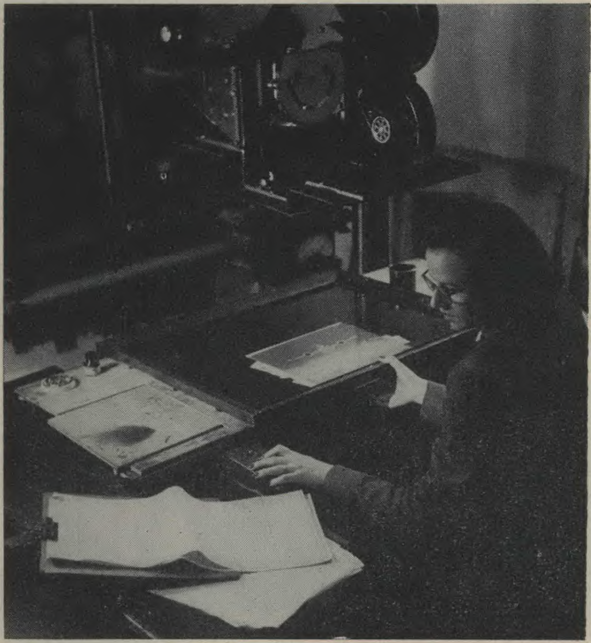
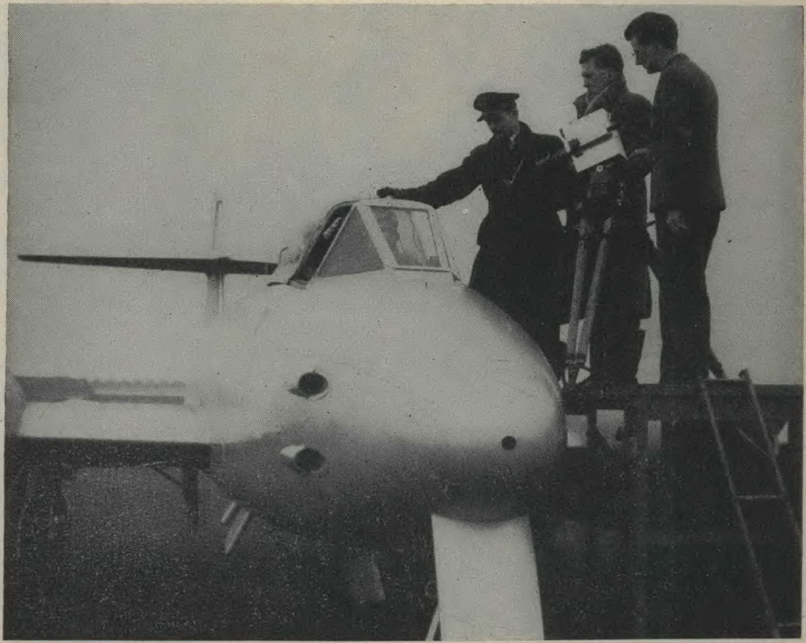


A CARTOON sequence, showing a humorous aircraft getting into difficulties, was filmed by the Gaumont-British Specialized Film Unit for Stewart Films, and integrated with the live action footage.

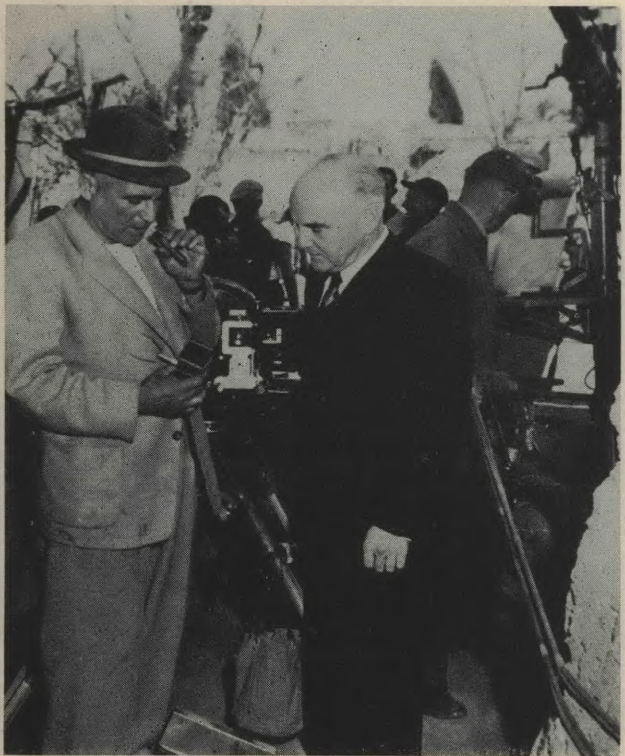


CLOSEUPS of the Meteor pilot were filmed on the ground. Because much of the action was filmed in the air in overcast, the closeups were made to match by shooting them on overcast days also, with the camera picking up no sky or clouds in the background.—All photos by Stewart Films, England.

TO EDIT CinemaScope films, it became necessary to devise a special auxiliary Lucite lens for Moviolas, which transforms the squeezed image on CinemaScope films to full panoramic width. Examining the new viewing attachment is TCF Cutting Dept. head Jerry Webb and film editor Barbara McLean.

20TH-FOX STUDIO engineering staff shows several components of new equipment which the studio had to design for CinemaScope photography, projection and sound recording. These include a projection lens, sound boom fork, camera finder, and camera lens mount.

LEON SHAMROY, ASC, (left) who filmed studio's initial tests with the CinemaScope lens and later photographed "The Robe," discusses the first anamorphic lens imported from France with TCF studio's technical director Earl Sponable.



The Big Cha

When 20th Century-Fox studios decided to abandon conventional film making in favor of CinemaScope productions exclusively, it meant making many changes in equipment, procedure and techniques.

WHEN THEATRE CURTAINS opened last month to reveal CinemaScope and its first vehicle, "The Robe," produced by 20th Century-Fox, millions of Americans were greeted by two of the most momentous and inspiring events to happen in the motion picture industry in more than twenty years.

The release of "The Robe" has come after more than ten years of untiring effort and preparation by the studio, and is almost unanimously considered to be the greatest motion picture of our time. Directly contrasting the many years which have gone into "The Robe" is the story of CinemaScope. It is a short story—less than ten months old—but it has already been written in indelible ink on the history pages of the motion picture industry, thanks to the vision and foresight of Spyros P. Skouras, president of 20th Cen-

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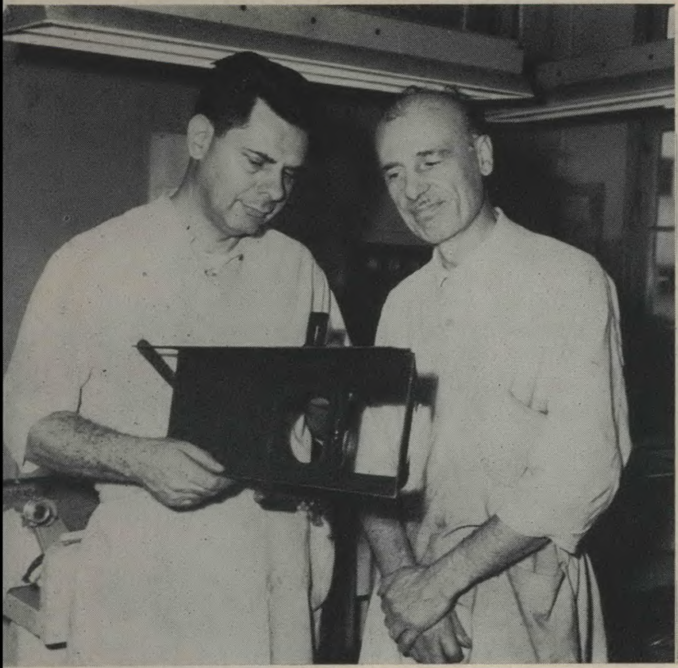
Adapted from "CinemaScope Didn't Just Happen," September, 1953, issue of *Action*, 20th Century-Fox employee magazine.



USE OF THE panoramic CinemaScope lens on conventional studio cameras called for re-designing camera sunshades. Technicians Morris Smith and Ray Bedolli examine the improved model.

A TELESCOPIC apparatus producing "an artificial star" is used by the studio to test accuracy of new CinemaScope lenses. Above, camera department head Sol Halprin, ASC, checks new lenses, aided by Campbell Forsyth and Grover Laube.

ngeover....

By BOB MINTZ

tury-Fox and Darryl F. Zanuck, vice-president of the company in charge of production, both of whom immediately saw the potentials of this new medium.

CinemaScope is a new horizon in motion picture technique. Technically, it is the greatest development since the introduction of sound twenty-five years ago. And it has represented as great a challenge to the technicians and artists at Twentieth as did the introduction of Movietone at the studio in 1927.

The story of Twentieth's conversion—the "big changeover"—to CinemaScope is an unusual interesting one because it reveals how one of the industry's biggest studios suddenly changed its whole course at a time when the industry was in the doldrums, and in face of dire warnings that such a move simply wasn't possible. The story is further important because the unprecedented success of CinemaScope portends similar moves by other studios.

The studio's first manifestation of the revolutionary French panoramic screen process came in January of this year when its Camera Department received one "Dr. Chretien" anamorphic lens. The first probings at the new medium consisted of photographic tests. To screen and evaluate these, a makeshift projection room was built on Stage 6 of the Western Avenue studios. Here a giant, curved screen 63 feet wide, having a new-type reflective coating was installed. It was planned originally to carry on a program of tests and proving of the anamorphic lens for a period of six months or more. However, after Mr. Zanuck saw the first tests screened, he decided to photograph "The Robe" in this new medium, starting as soon as possible.

The entire CinemaScope program of the studio's camera department was conducted under leadership of Sol Harprin, ASC, head of the department. The first real production tests were made of actual scenes and sets of "The Robe." When the second French anamorphic lens was received by the studio, it opened the way for production of a second picture in CinemaScope. As actual production photography on "The Robe" began, "How To Marry A Millionaire" was being readied to go before the second CinemaScope camera.

The significance of the studio's decision to convert all production to CinemaScope was felt immediately. It affected procedures in almost every department related to production. Involved immediately in changing to the new CinemaScope technique were those employed in cinematography, set lighting, film editing, and sound recording.

Early tests indicated several changes in design of the anamorphic lens would greatly improve photographic results as well as simplify use of the lens in production photography. For one thing, the original French lenses were in square mounts and required unweildy apparatus to hold them before the cameras. These had very crude follow-focus

(Continued on Page 497)

"Let Me See

TYPICAL OF the modern cinematographic equipment which the USC students used in filming "Let Me See" is latest Mitchell "16" camera shown here in hands of Richard Harber and Robert Keifer filming a dolly shot on an indoor location.

THE EARLY DAY Angeleno who built the spacious stable at the corner of West 35th Street and Hoover Boulevard, Los Angeles, would be in for quite a surprise today if he could see well equipped student camera crews coming and going throughout the day instead of the elegant horses and riders who graced its portals some forty years ago.

This converted stable is now the collected offices, laboratories, sound stage, and class rooms of the University of Southern California's Department of Cinema.

Believed to be the best equipped year-around university film production workshop in America, the Department of Cinema provides a unique opportunity to students who gather there from all over the world. In close proximity to the motion picture industry in Hollywood, the department is busy training students in all phases of motion picture production and utilization. To augment its regular instructor staff, the Department regularly calls on outstanding workers professionally active in both the theatrical and motion picture fields. Recent guest lecturers include such distinguished cinematographers as Academy Award winners Arthur Miller, ASC, and Floyd Crosby, ASC, and screen producers Jesse Lasky and Carey Wilson.

Early this year, the Hollywood motion picture industry gave our Department of Cinema probably its greatest incentive when the Screen Producers Guild announced its annual Intercollegiate Film Awards for the best motion pictures conceived and created in the nation's colleges and universities. At the time of this announcement we were completing production of a 16mm documentary film in color and sound on the care and training of blind children entitled "Let Me See." Upon completion the film was entered in the Intercollegiate competition. It subsequently brought us the Guild's first Gold Award—the highest in the Guild's annual presentations.

"Let Me See" was the Department of Cinema's most ambitious project to date, both in scope of subject matter as well as in footage, and marked the first time that many of the students had worked on a school production of any magnitude. We have a unique method of spreading the training over the entire student body so that all receive equal training in all phases of production. Thus the men who held posts as assistants on "Let Me See" assumed number one positions on our next picture.

The purpose of this film was to show graphically the day-by-day activities of a prominent nursery school for blind children as they are integrated with prescribed home training, and the eventual results. Students writers had worked on the script for nearly two years before we put it into production. After our script had been approved it was channeled much the same way as an approved script in a major studio; then followed the usual pre-production planning, set designing, and the inevitable budgeting of costs.

Our script provided for dialogue as well as narration plus certain prescribed enactment of activities, all by non-professional actors—actually the blind children, their teachers and the parents—all of whom played themselves in the picture. The "non-professional" factor posed one of our major problems for, as we found out later, amateur actors invariably lose spontaniety after the first take.

Immediately, our big problem, directorially, was getting blind children who have absolutely no conception of what are cameras and motion pictures to repeat their actions and dialogue again and again until satisfactory print-takes

STARTING a pullaway shot with the Mitchell "16" camera mounted on a Fearless dolly riding in tracks. Nursery school interiors were shot on actual location.

—Top Intercollegiate Film Award Winner

How University of Southern California students produced the 16mm color and sound film that won the annual Gold Award medallion of the Screen Producers Guild.

By HERBERT SKOBLE and ROGER ANDREW CARAS

could be obtained. This proved as much a strain on the camera and sound crews as it was on the children, and on the parents who played themselves in the film.

All the scenes showing the care and training of the children in their homes were shot on our own sound stage. This involved three different sets comprising the interior of a three-room cottage, and were designed and constructed by the students and faculty members.

These sets were lit with standard studio set lighting equipment such as Seniors, Centuries, 10-K's, etc. We have no generators, portable or otherwise, but utilize utility lines for power. Our sound stage is wired for a maximum of 800 amps.

To photograph the picture, we used the Department's Mitchell "16" camera mounted most of the time on a Fearless dolly. Almost all sequences were shot with sync sound, using Stancil-Hoffman 16mm magnetic film recorders.

Because a great deal of the picture was filmed on actual location in the classrooms, dormitory and dining center of the nursery school, we encountered the problem of excessive heat from the lamps used for illumination. In the low-ceilinged rooms the temperature rose to as much as 120 degrees in a very short time. This made it necessary to limit our takes and to be well prepared for each take before lighting up our sets and rolling the camera.

We utilized the Fearless dolly a great deal in making tracking shots in many of the interiors. The dolly was mounted on tracks and our crew members functioned like real professionals in the maneuvering of the dolly and operation of the camera crane.

When shooting scenes involving a great many of the children, we invariably ran into difficulty with one or more of them because of discomfort, temperament, etc. In such instances, we would stop shooting while a member of the crew took the uncooperative youngster out into the patio and told a few "cowboy and Indian" stories or wrestled with him until the child was back in the mood where he would cooperate.

Throughout production, the mood of the children dictated the rate at which filming could proceed. Some of the men on the crew displayed unbelievable patience, working as a cameraman or a grip one minute, and as a "camp consuelor" the next—all in an effort to keep the production going smoothly. Without this spirit the picture literally would never have been made. Indeed, in many instances, members of our crew were better able to handle the children than were the parents.

Perhaps one of the most interesting sequences filmed was the one calling for a series of shots showing the various activities of the children out of doors. Because this action had to be filmed almost unobtrusively and because one camera could not possibly have gotten the wide range of shots desired, we gave several members of our camera crew hand-held 16mm cameras with instructions to watch for and record the type of action we needed. Besides the Mitchell "16," we had a Cine Special, a couple of Bell & Howell 70-DL's and three Bolex cameras shooting simultaneously. The usual problem of varying frame lines in the different

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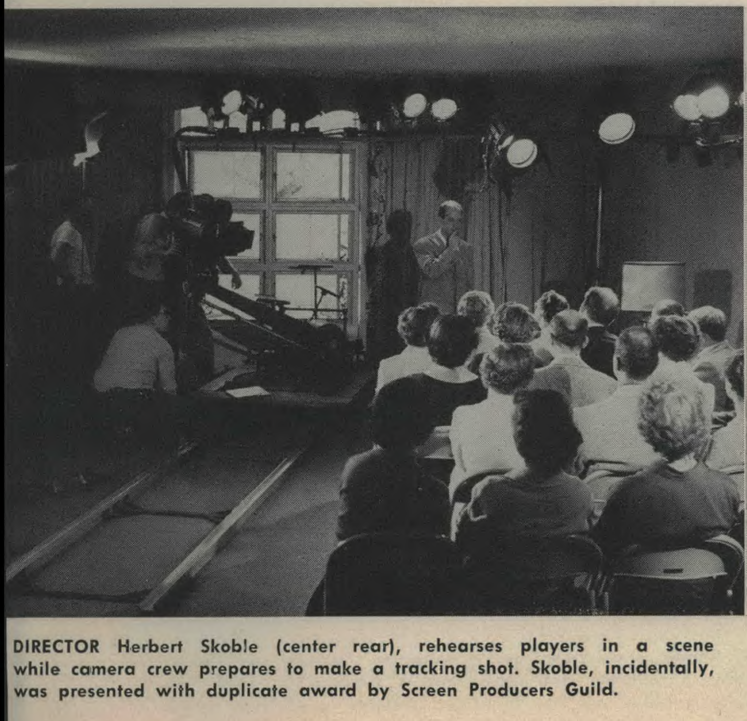
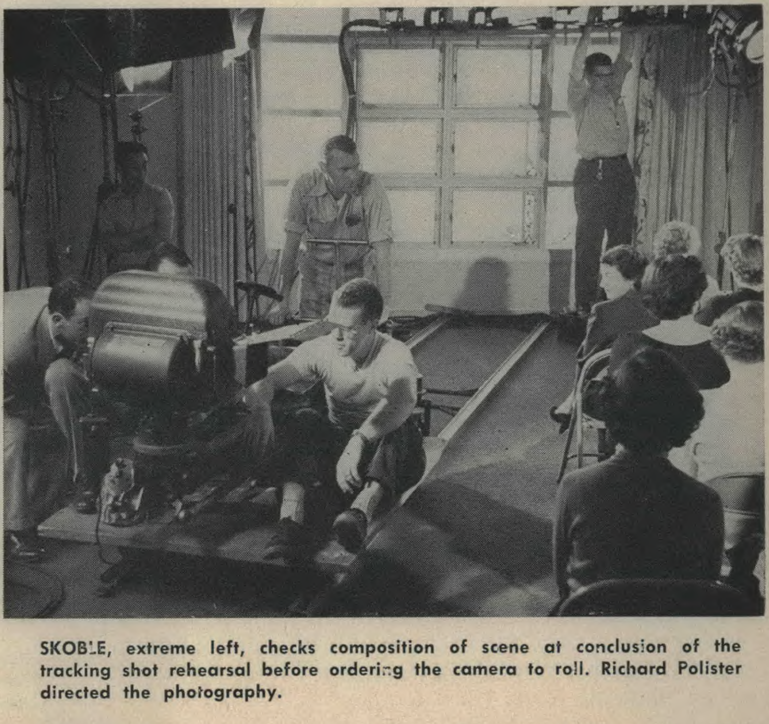


DIRECTOR Herbert Skoble (center rear), rehearses players in a scene while camera crew prepares to make a tracking shot. Skoble, incidentally, was presented with duplicate award by Screen Producers Guild.



SKOBLE, extreme left, checks composition of scene at conclusion of the tracking shot rehearsal before ordering the camera to roll. Richard Polister directed the photography.

MGM PROJECTIONIST Purdon C. Young, who developed the Variscope, studio's wide-screen projection lens auxiliary. Variscope mounts on regular projector lens. Picture size on screen can be quickly zoomed from one width to another by means of control knob.

MGM's Variable Wide Screen Projection Lens

With the aid of the Variscope, theatres can screen films of any aspect ratio with the same projection lens.

By FREDERICK FOSTER

IN ADDITION TO super-wide-screen CinemaScope, Hollywood today is making feature films for wide-screen presentation in four recommended aspect ratios (screen picture sizes): 1.85-to-1, 1.75-to-1, 1.66-to-1, and the conventional 1.37-to-1. Until now, an exhibitor wishing to show films in all wide formats required one or more pairs of wide-angle projection lenses in addition to the pair of standard lenses.

At present, a suitable wide-angle lens must be mounted in each projector in place of the standard lens each time a picture is to be screened in a format other than the standard 1.37-to-1. This operation becomes all the more complex if there are two or more films on the same program requiring different aspect ratio projection.

To meet this problem, Purdon C. Young, special projectionist at Metro-Goldwyn-Mayer studios in Hollywood, has developed a zoom-type auxiliary lens, which makes it possible to screen pictures in all aspect ratios when it is coupled with a standard 35mm projection lens.

The new lens, which has been tradenamed Variscope, will provide a range of aspect ratio projection from 1.37-to-1 to the panoramic 2.66-to-1. The need for separate wide-angle lenses for each aspect ratio is no longer necessary.

In use, variable screen size is achieved by simply changing position of the Variscope front lens element, and inserting a matt of the correct size in the projector aperture. The lens adjustment is achieved by sliding a knob in a slot in the side of the Variscope lens barrel. Framing this slot is an engraved scale plate to aid in quickly setting the Variscope lens at previously determined points. The scale position for any given aspect ratio, for example, can be indicated on the side of the lens barrel with a grease pencil or by noting the figure on the scale plate.

Setting focus and screen size is a simple three-step operation: First, the correct matt is inserted in the projector aperture; second, the Variscope is adjusted for the desired aspect ratio or picture width; and third, the projector lens itself is then focused in the usual manner.

The general procedure for the theatre projectionist is to make these adjustments in advance and to run a test screening to determine the proper Variscope settings, lens focus, etc., for the recommended aspect ratios of all films on the program. The necessary cue marks are then made as a guide so that it is unnecessary to make any distracting lens adjustments after projection of a picture begins.

A theatre owner having projectors equipped with Variscope auxiliary lenses, can accept for screening in his house pictures of all aspect ratios, providing he has a screen of suitable height and width.

At a recent demonstration on MGM's experimental sound stage, Young projected scenes from the studio's "Kiss Me Kate" up to 77 feet in width with excellent definition. In previous tests, pictures were projected with the Variscope up to 150 feet in width. Subsequently demonstrations of the lens were given before members of the S.M.P.T.E. in Hollywood. Using a standard 35mm projector lens coupled with the Variscope, Young screened scenes from "Kiss Me Kate" in all aspect ratios. Approval of the lens was unanimous as a result, and plans are now being made to demonstrate the Variscope at the forthcoming S.M.P.T.E. convention in New York City early this month.

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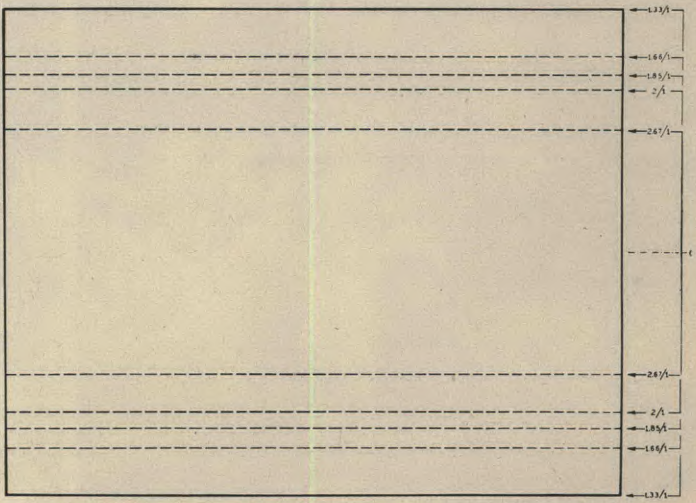

CHART shows wide-screen aspect ratios in common use today. Normally, a separate wide-angle lens is required for each. The Variscope enables one lens to project pictures in all four ratios.

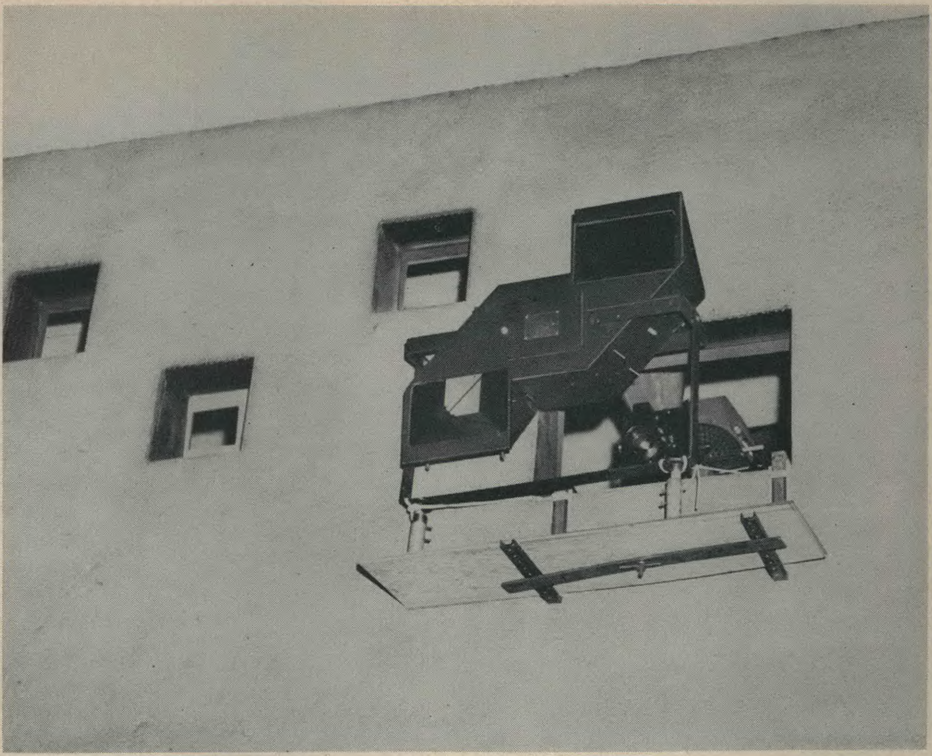

FIG 1—Showing simple installation outside projection booth of the new Nord 3-D single-strip projection system. Units are also available for installation inside the booth. Optical system rotates the twin film images 90° and throws them on theatre screen erect.

Simplified Single-film System For 3-D Exhibition

Nord System, which puts twin 3-D images on single strip of 35mm film, insures synchronization and cuts production and exhibition costs.

By ALVIN D. ROE

ONE OF THE INEVITABLE conclusions that invariably is reached in any study of 3-D motion pictures today is that the success of 3-D depends as much as anything else on careful if not precise control in projection. Recent investigation has shown that much of the eye discomfort of theatre patrons viewing 3-D films is due not so much, if at all, to the photography or the viewing glasses, but to imperfect projection of the picture.

In most cases, faulty projection of 3-D lies entirely with the lack of synchronization between the twin stereo films. The Polaroid Corporation has demonstrated, with the aid of its new 3-D electronic sync control device, that when the two films are out of sync as much as ½ to ¾ of a frame, serious eye discomfort results for the viewer.

Others, besides Polaroid Corporation engineers have discovered this of course, and have sought a simple remedy. The most practical appears to be the recently announced Nord System, developed by Roy Clapp. This process involves putting both right and left eye images on a single film, so that the two are projected absolutely in sync by a single projector. There are other advantages, too.

Because illumination from the same projector lamp house flows through the two images, illumination of both on the screen is always equal.

The Nord equipment has the Polaroid filters for projection built in—all preset and properly angled—to insure the best 3-D projection.

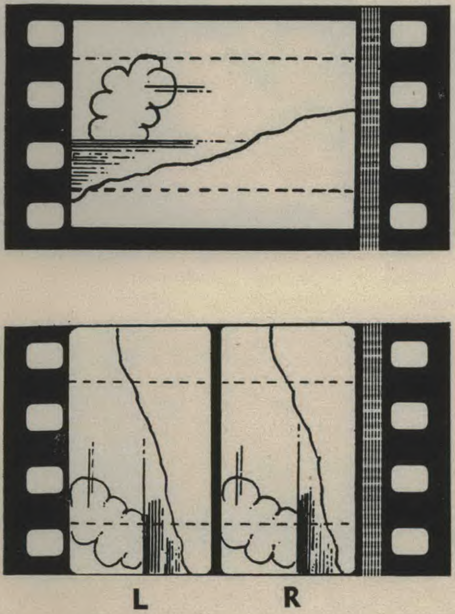

FIG. 2—Diagrams show conventional film frame (top) with wide-screen aspect ratio indicated by dotted lines, and the same frame area (below) with the twin 3-D images side by side as in the Nord System.

Print cost is cut in half, because both images are printed on one film; prints are made by standard release print methods.

3-D film programs can be handled the same as regular films without the need for intermissions, and no extra projectionist is required. In short, the Nord System provides 3-D with standard 2-D type operation. No retraining of personnel is required; there is nothing new that the projectionist has to learn. In case of a film break, splicing can be done without fear of throwing the two 3-D images out of sync, as is often the case where 3-D is on two separate films.

Actually, the Nord System gives the film producer substantial control over the presentation of his 3-D films, insofar as the synchronization problem is concerned.

The Nord System consists of 1) a method of optically printing 3-D films to a single 35mm film, with the images head to toe, as shown in Fig. 2, and printed in wide-screen format of 1.75 to 1; and 2) the Nord stereo projection unit, which is an optical device with no moving parts, having no mechanical coupling with the projector, and which is mounted between the projector and the screen. There are two models: one

(Continued on Page 509)

Film Splicing Without Cements Or Adhesives

Butt-weld splicing eliminates need for scraping emulsion and use of cement. Tensile strength of splices ranges between 90% and 95% of film itself.

By LEONARD A. HERZIG

A NEW METHOD of splicing motion picture films has been developel which incorporates the principle of butt-welding film end-to-end, and which eliminates the need of scraping emulsion, cementing and overlap. The splicer which accomplishes this is the Presto-Splicer, illustrated on this page. The principle of the Presto-Splicer is based on a combination of controlled heat and cooling gradient applied under pressure within a given time cycle, and producing a homogenous splice. Properties of the film are not affected because the film is automatically pre-plasticized prior to splicing. The method may be used for all types of safety film.

The Presto-Splicer, shown in Fig. 1, consists of a foundation base and an interchangeable 16mm or 35mm head. The base encloses all the electrical and timing components with the exception of the heater element, which is located in the head assembly. The interchangeable heads can be removed from the base or re-assembled thereto in about 30 seconds. The overall dimensions of the splicer are:

Height	9 in.
Width	11½ in.
Length	17½ in.
Weight	17½ lb.

Maximum power consumption is .100-w.

The splicer operates on 110/120-volt, 50/60 cycle current and may be converted for use with 220-volt power. The castings throughout are aluminum alloy. Finish is hard-baked black crackle.

In the splicing of dissimilar safety base materials, no trouble has been encountered when splicing present types of film, whether to the same or to dissimilar film. However, different time and heat settings of the splicer are necessary when splicing dissimilar materials to each other. These settings can be classified as low, medium and high. The DuPont safety-base film falls into the low category, as it has a low heat requirement. Negative Eastman stock falls within the medium heat requirements, and positive Eastman stock falls into the high heat requirements. When splicing low heat requirement material to a high heat requirement material, the higher of the two settings on the splicer is used.

In the current method of cement splicing, accuracy of the cut with relation to the sprocket hole does not introduce any serious problem. However, where butt-welding is to be achieved, this cut, with relation to the sprocket hole, has to be kept very accurate. To accomplish this, it was necessary when designing the Presto-Splicer to take into account the 0.2% film shrinkage tolerated in the motion picture field. Obviously, this eliminated pins and it became necessary to use only one indexing pin for both cuts, as shown in Fig. 3.

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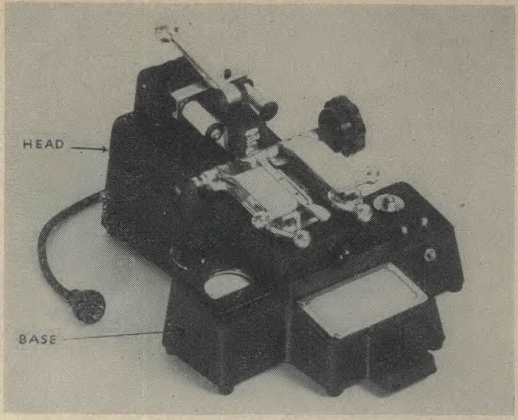

FIG. 1—The Presto-Splicer will splice magnetic film or tape without affecting sound or picture quality.

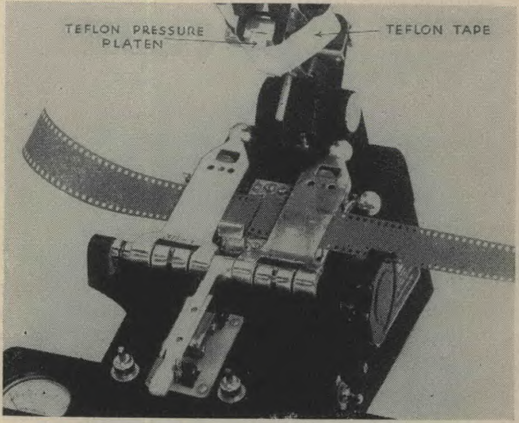

FIG. 2—Special use of Teflon tape on pressure platten insures proper heat treatment to effect butt weld.

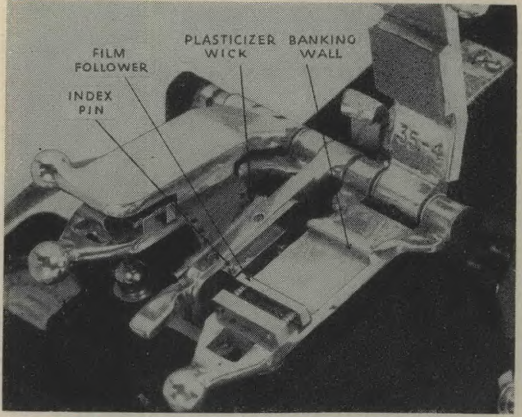

FIG. 3—Automatic plasticizing unit conditions film before it is spliced. Index pins insure register.

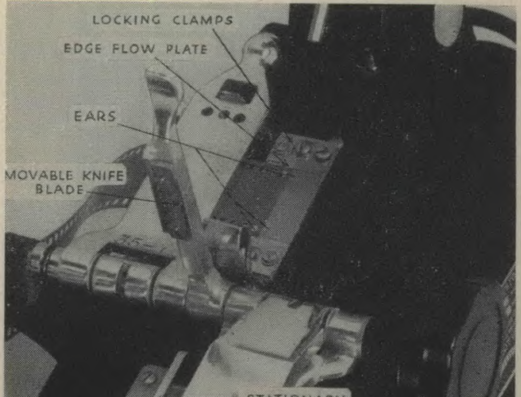

FIG. 4—Splicer has many unique features which insure accuracy and permanency of the electric-welded film splice.

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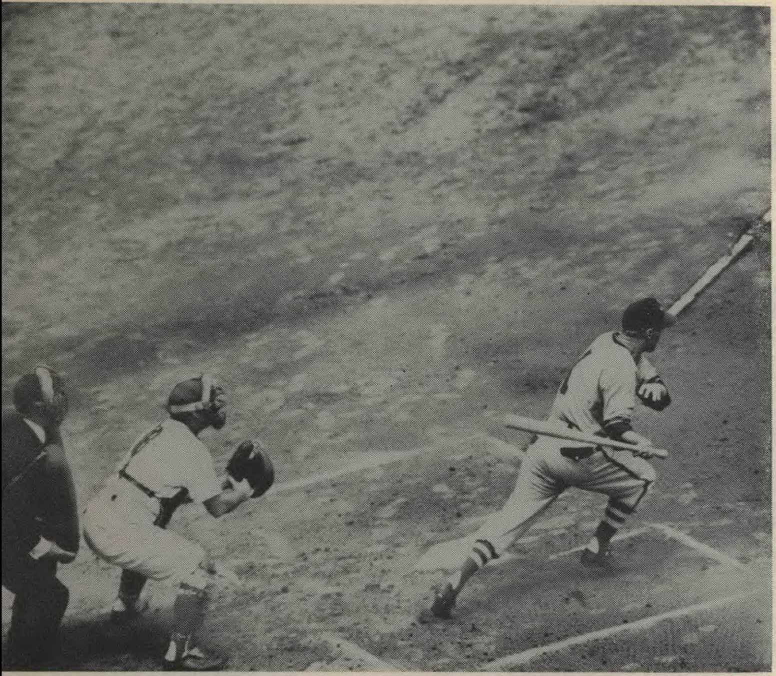
Editing for Balance

The difference between an effective or ineffective cut can be only a few frames. The secret is knowing when to stop — when to cut for greatest effect.

By PHIL TANNURA, A.S.C.



WHEN FILMING SPORTS it's good policy to shoot the entire action in order to achieve smoothness and naturalness. But it isn't necessary to include the entire cycle of the action in the finally edited picture exactly as you filmed it.

THERE AREN'T MANY PEOPLE who can take a motion picture apart and criticise as a separate contribution the editing in the same sense that they can the acting or the camerawork; but when you see a motion picture that unreels smoothly, that puts emphasis in the right places and points up the highlight of the story, whatever it is, you can be sure that it is a good editing job.

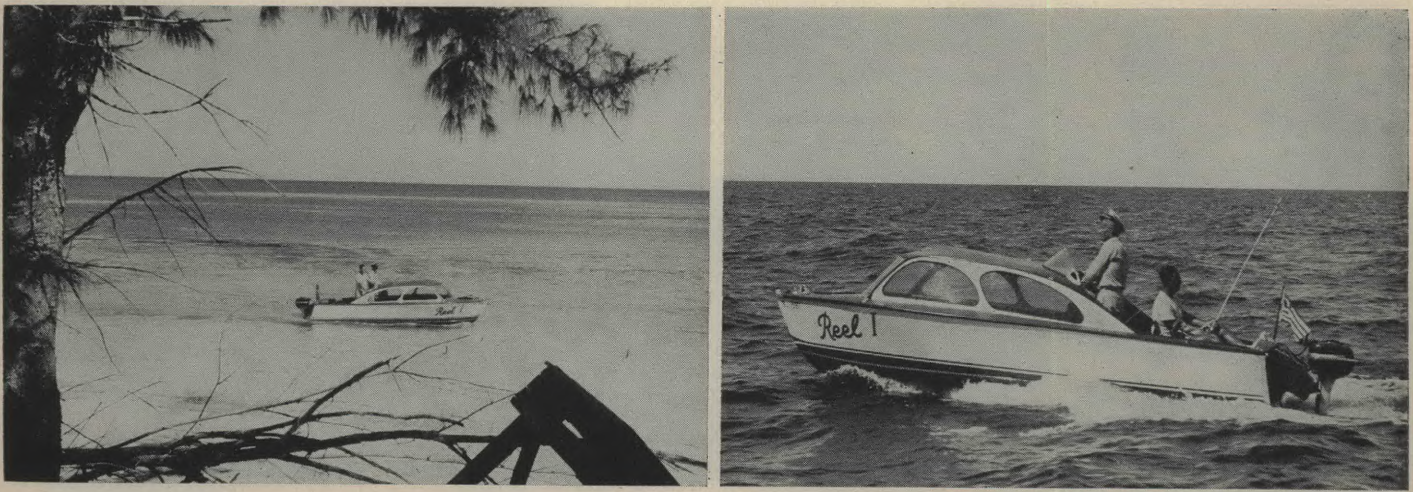
Unfortunately too many movie makers in the beginning seem to work on the theory that film editing is simply a matter of cutting out the bad frames that mark each camera start, and splicing consecutive scenes together. Yet the proper handling of a picture in the editing stage is as important to its ultimate success as proper direction, scripting or camera work.

Professional film makers have demonstrated this often enough. All things being equal, poor treatment of a film at the hands of a film editor can turn what by more skillful handling might be a good picture into something very mediocre. On the other hand, a film editor with a good sense of continuity and timing can take what might be a mediocre picture and by his deftness turn out a smooth, interest-sustaining picture.

The same sense of showmanship that is necessary to good direction, writing, scripting or camera work is prerequisite for an equally effective cutting job. And one of the first rules is to learn *when to stop!* When to stop showing the picturesque or expensive establishing "production" shot and cut to some more intimate business; when to cut away from the "intimate business' to a "reaction shot"; when to cut the take on a humorous or dramatic expression or action to get the full benefit of showmanlike punch out of it.

The difference between an effective or an ineffective cut can in many instances be only a few frames. Especially if you are trying to build tempo, every unnecessary frame after a given bit of business or expression has registered is helping to defeat your purpose. This rule of knowing when to stop seems to be one that many moviemakers would do well to learn and profit by. So many of them just don't want to throw away any film at all. They want to include every photo-

(Continued on Page 492)



TWO SCENES above represent technique of cutting from a long to close shot. However, there's one mistake: boat in close shot should have been filmed travelling in same direction as in long shot—a common mistake in many amateur films. All travel in a sequence of this kind should be in the same direction.—Photos courtesy Kiekhaefer Corp.

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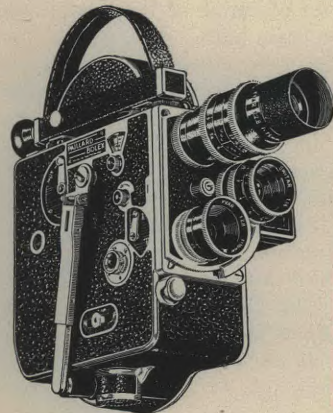

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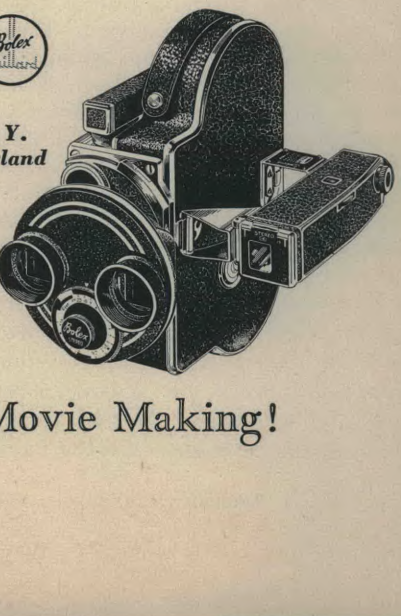

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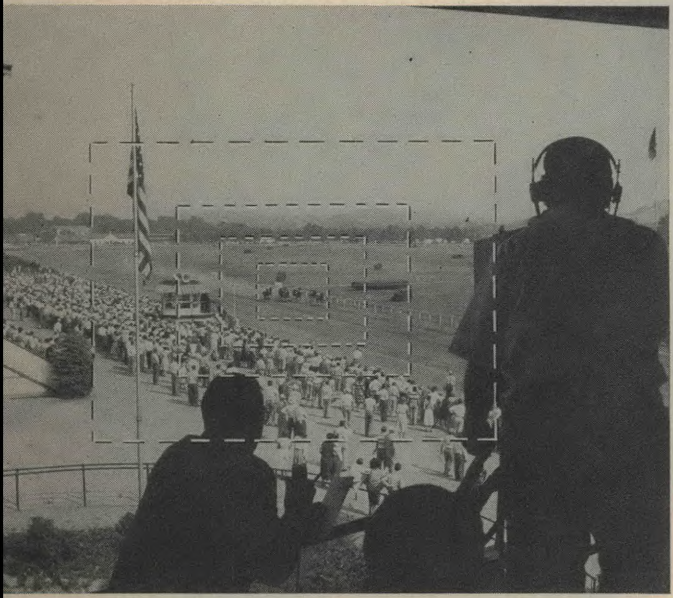
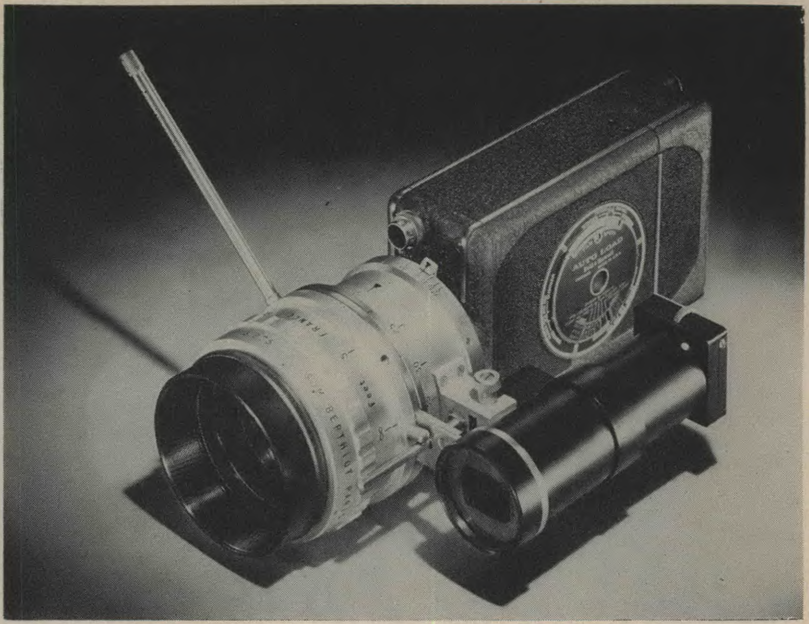


DOTTED LINES show picture area taken in by the Pan Cinor in a typical zoom shot of a horse race—recording the scene in a range from 20mm focal length down to 60mm.



THE PAN CINOR f/2.8 zoon lens mounted on a Bell & Howell 16mm Auto-load camera. The coupled finder shows the scene area covered at all times. Exposure is constant at all focal lengths.

The Pan Cinor—Variable Zoom Lens For 16mm Cameras

You can zoom in or out, or simply set it for any focal length from 20mm to 60mm and see exactly what you're filming with the new Pan Cinor lens.

By ARTHUR ROWAN

One of the most interesting lenses recently made available to 16mm cameraists is the Pan Cinor zoom lens, manufactured by SOM Berthiot in Europe and distributed in this country by Paillard Products, Inc., New York. When Paillard first announced it, the lens was available only for the Bolex H-16 camera, which the company also distributes. Last month, Paillard announced that the lens was now available for use also on the following 16mm cameras: Maurer, Mitchell-16, Auricon Cine-Voice, Bell & Howell 70, Keystone 16mm, Cine Special, Bell & Howell Autoload and Automaster, Morton Soundmaster, Revere Magazine, and the Pathe Super 16. It sells for about $447.00.

The 16mm Pan Cinor has a maximum aperture of f/2.8, a focal length variable from 20mm to 60mm, and has a coupled viewfinder that shows the exact field at each setting. The lens is not intended to *replace* lenses of fixed focal length (each of which realizes a higher degree of optical quality for its own focal length) but to offer effects which cannot be obtained with them, such as:

Zoom and dolly shots . . . from long or medium to closeup in one movement.

Travelling shots . . . that keep the subject in motion at a fixed size. Before the advent of the Pan Cinor, such effects were possible only with use of camera cranes or back-projection methods—obviously out of range of the amateur and 16mm professional.

Complete coverage . . . without switching lenses, catching every action of a sports event.

The Pan Cinor fits all of the above named cameras readily, although slight alterations are necessary on some. The Maurer drops its own finder, its regular C mount accepts the Pan Cinor without further modification. For the Mitchell-16, the Pan Cinor finder is removed and the lens mounted with a C mount adapter. It is also necessary to turn down diameter of the camera turret knob.

For use on the Auricon Cine Voice, it is necessary to obtain from the camera manufacturer a special door without its viewfinder. This may be purchased for $42.00. For use on the Bell & Howell 70, the regular door of this camera must also be replaced with one having no finder. This costs $35.00. The Cine Special Models I and II must have the turret drilled and tapped for C mount lenses by Kodak. The Morton Soundmaster drops its regular finder, and the Pan Cinor zoom lever must be shortened slightly to clear the film magazine. For the Pathe Super-16, no alterations to camera are necessary. However, the Pan Cinor coupled viewfinder is eliminated and the regular reflex finder of the camera used, which permits viewing scene through the lens as action is being filmed. The Keystone, B & H Autoload and Automaster, and Revere Magazine Camera mount the Pan Cinor with ease.

The focusing range of the Pan Cinor is 5 feet to infinity at all focal lengths. To control composition, you simply turn the lever and check the desired picture through the coupled viewfinder. The exposure is constant at all focal lengths, and the f/2.8 aperture is fast enough for indoor color or black-and-white filming.

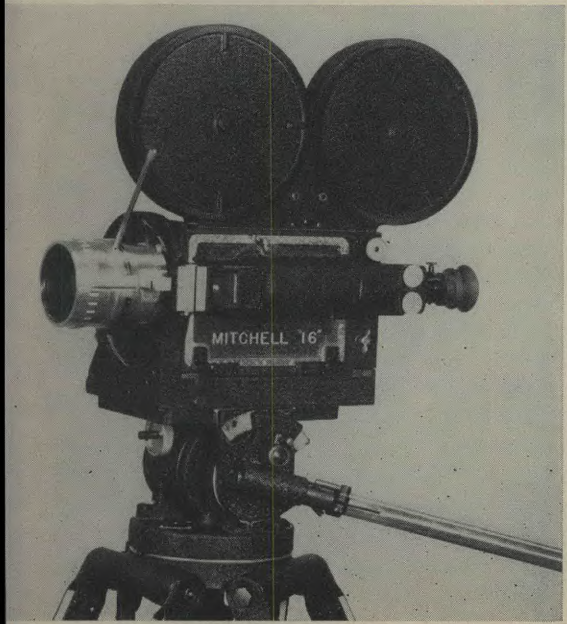
It is recommended that the camera, when shooting with a Pan Cinor, be mounted on a sturdy tripod. In general, the lens is used like any lens of fixed focal length. Simply set the diaphragm in the usual manner according to a light meter reading of the scene. A simple chart is supplied with the lens that indicates the depth of field for each focal length and aperture used. The Pan Cinor may be focused by setting its focusing scale to the distance measured, or through the Bolex eye-level focuser.

In 16mm photography, uses for the Pan Cinor are unlimited. For the serious 16mm amateur who can afford it, the lens greatly simplifies photography in that in most instances it obviates the need for switching from one size lens to another with the consequent setting of focus and lens stop when it is desired to cut quickly from a long-shot to a closeup. By the same token, its value to the 16mm professional is obvious. And for filming TV film commercials it is a most ideal tool.

Harry Pennington Jr., of San Antonio, Texas, one of the first to acquire a Pan Cinor for his 16mm Bolex, described the value of the Pan Cinor from the viewpoint of the experienced cam-

(Continued on Page 508)

WHEN mounting the Pan Cinor on the Mitchell "16" camera, the coupled viewfinder is omitted. Lens is an ideal tool for use in production of 16mm industrial and TV films.



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to all who own 16mm stereo equipment

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- Film judging panel will include directors of photography in major studios who have photographed 3-D films, and whose names will be announced here next month.

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Sir: I plan to enter my film entitled:______________________

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in your forthcoming 16mm 3-D FILM FESTIVAL.

My film is__________feet in length, in color__________, black-and-white__________. It has sound: on film (optical)__________; on film (magnetic)__________; on separate tape or film (magnetic)__________; on discs (synchronized)__________.

Brief description of film subject or content______________________

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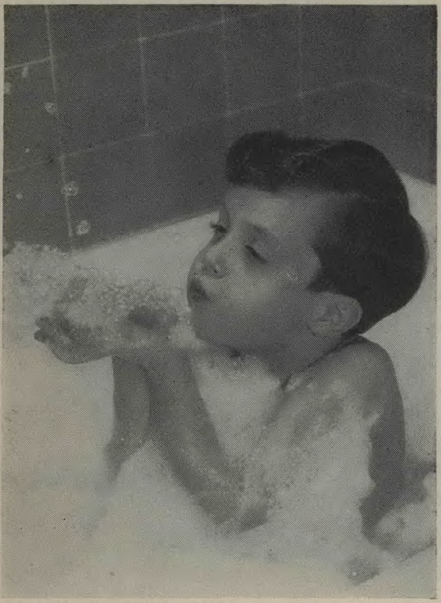

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EDITING FOR BALANCE

(Continued from Page 488)

graphically-perfect frame. But they do so only at the expense of jeopardizing the entertainment value of the picture as a whole.

So don't hesitate to shorten a scene. No one will feel as sentimental about it as the fellow who shot it anyway. Keeping in mind the basic rule "make your moving pictures *move*," when you have made your point, change the subject, or at least the angle of approach.

There is no excuse for "drag" in any motion picture, amateur or professional. Even the most beautiful landscapes or sea views in color can only sustain interest up to a point. And that point can be reached sooner than you think. Therefore, do not hesitate to cut them as soon as they have had time to *register* on the screen.

Of course, all these factors should be considered when the photography is being done; the cameraman should keep the editing of the picture in mind as he shoots. When filming purely scenic shots or sequences, the thing to remember is that every landscape or vista is composed of elements that are invariably worthy of closer scrutiny by the camera. Perhaps the trees that formed the principal mass in the long-shot will offer a lot of interest for closer shots, as will the shrubs, wildflowers and grasses where these also appear in the scene. Properly handled, these elements can make up for the absence of people in the scene to round out a three- or four-scene sequence.

When filming action it is generally considered good policy as an aid to editing to shoot the entire action cycle in order to achieve smoothness and naturalness. However, at the editing board it isn't necessary to include the entire footage in the same form and continuity in which it was filmed. For example if you go from a long-shot to a closer one on action where, say, someone is shown seating himself in a chair, you can cut the long-shot just as he starts to sit down, then cut to a closer shot just as he's getting settled. You'll get a much smoother flow of movement on the screen. It will save footage, too. All sorts of action can be similarly treated, too, with like benefits in picture interest.

Where spoken titles are used, the same technique applies: cut in the title just *after* the frame showing the character *starting* to speak. And when cutting back to the picture, show the person just *finishing* speaking. Never, never allow the person to appear talking for some length after the title ends. The audience, while reading the title, will mentally bridge over the gap in the pictured action, and will accept this treatment as being much more natural than if the entire action is shown.

You are getting on with the story, moving progressively forward—which is the important thing—whenever you lop off any frames or footage that do not contribute directly to progression of the story. To establish the fact that a character leaves one room for another, it is not necessary to include in the edited film the whole action that takes him to and through the door of one room, and then pick him up as he emerges through the door in the next room. Too many amateurs make this mistake in their first efforts at continuity films. Once it has been established that the player is going through the door, the next scene can cut to him when he is well into the room. This illustration can have many applications. And while such cuts can involve only an inch or two of film, the sum total of such cuts in a picture can mean the difference between its being interesting or tedious.

One can use the same principle to speed things up and save footage in many other ways, too, especially if one knows how to balance shots of the actual action with intercut shots of somebody's apparent reaction to it.

Take a horse race movie, for example. Excitement is added and there is no loss of realism if the sequence is built this way: Begin with a shot from the grandstand of the horses getting away from the gate. Then cut to a long-shot (preferably from more or less of a reverse angle) of the crowd reacting to the always thrilling cry "They're off!" Then cut to a long-shot of the horses rounding the first turn. Next cut to a fairly close shot of only one or two people in the crowd, as each reacts to the way their respective favorites are performing. Next cut to a follow-shot of the horses racing down the back stretch, and follow this with more reaction shots of the crowd—preferably at increasingly closer angles. Cut to the horses as they round the final turn and into the home stretch. Follow this with a series of quick, close shots of various spectators as each anxiously urges his favorite on to the wire. Then cut to shots of the actual finish, after which you can cut to more reaction shots of the spectators—the lucky ones gesticulating their joy, and the unlucky ones tearing up their tickets and tossing them away.

All this of course has to be photographed first before you can edit it.

(Continued on Page 494)

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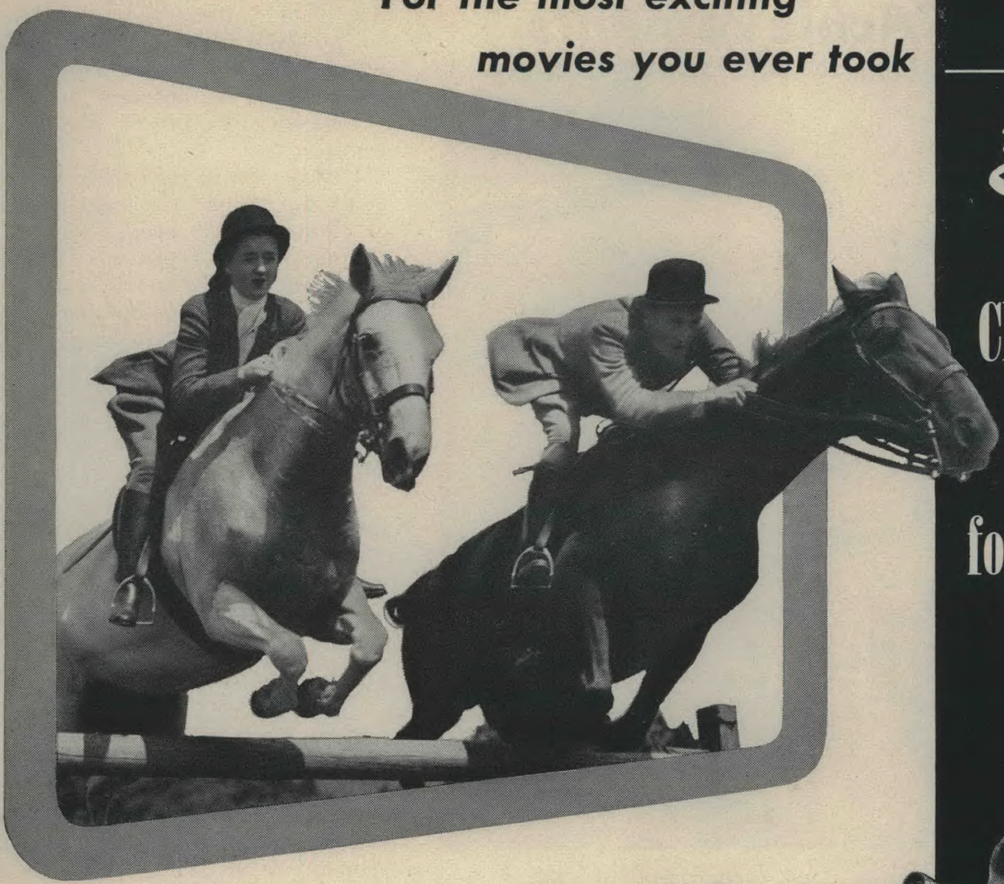

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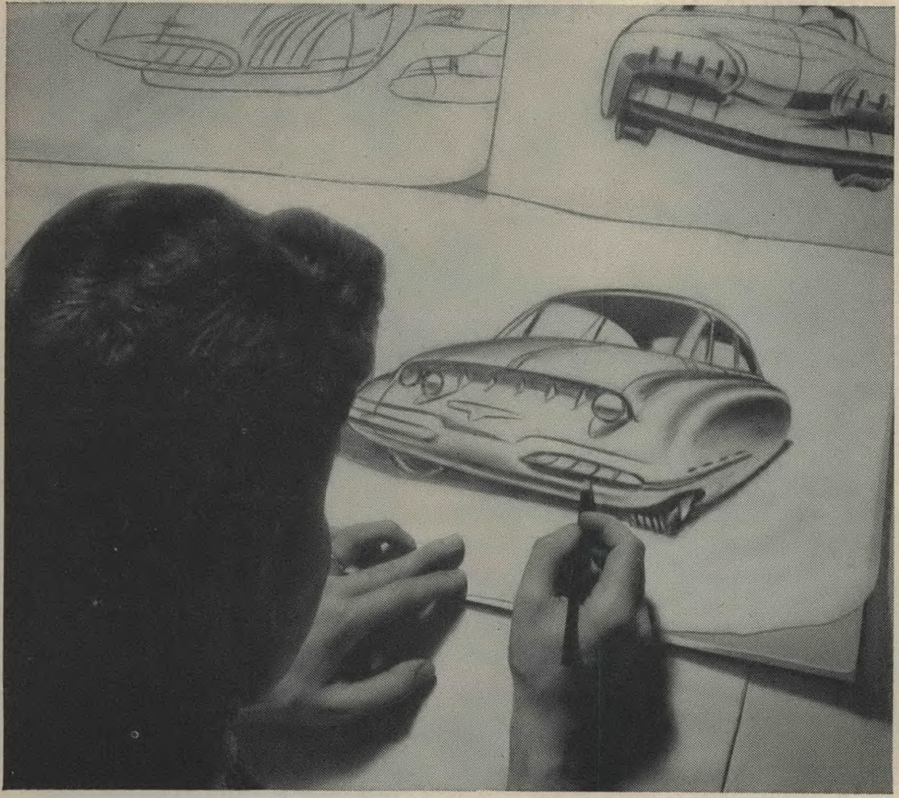

"The Look of Things"

It is a truism that the most perfect printing and projection in the world cannot make up for uninteresting subject matter in a film. But the opposite also holds true. The finer the subject, the more it deserves—and needs—perfect laboratory duplication to set it forth.

This is why we feel that the finest combination of every factor won for the notable 16mm film subject THE LOOK OF THINGS the first prize in the Public Relations Category of the recent Cleveland Film Festival. The competition was keen, but this winner was outstanding. Every producer, every film man and, indeed, every individual with an interest in viewing a superior motion picture should make it his business to see this film. The producer would be pleased to arrange for screenings through inquiries directed to us.

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Unless you do your filming according to this pattern—think about the editing as you shoot—you won't have the material to use at the editing table. A horse race shot entirely from one position on the track is scarcely exciting on the screen. But filmed and edited as outlined above, it becomes an exciting, professional-like bit of film entertainment.

Perhaps in summarizing we should point up further the great importance of planning the editing along with the photography of a picture. This is very important for the movie amateur; the professional cinematographer doesn't have to follow this technique, because another person—the film editor—puts the film together; the cinematographer has a preplanned script to follow, which was worked out carefully with the editing of the picture in mind.

So remember this if you want your films to have the compelling interest, the professional flair that you admire in theatre films. END.

FILM SPLICING

(Continued from Page 486)

The film is clamped to the splicer base in the usual way except that a banking edge is required in order to obtain perfect alignment control throughout the splicing cycle. The clamps, therefore, incorporate a pair of film followers (Fig. 3) which push the film to the banking side of the clamp prior to its being closed.

After the film is indexed and clamped, it is then cut, and the clamp still holding the film is swung through a 180° arc into the heat-sealing position. The same cutting blade is used to cut both pieces of film. As the second clamp is rotated to the heat-sealing position, the edge of the film to be heat-treated is coated with the plasticizer (Fig. 3).

At this point it should be noted that one of the major splicing technique changes is that the film is clamped with the emulsion side facing down and the cellulose side up. Of course, when the film is pivoted over a 180° arc to the heat-sealing position, the emulsion is facing up and the pressure applied to the emulsion surface. The heat is then applied to the cellulose side (Fig. 2).

Different problems are presented by 16mm and 35mm films during the heat cycle. The frameline of a 16mm picture is on line with the sprocket hole, which fills up completely during the heat cycle. With 35mm film, there is also the tendency of the acetate to flow into the four sprocket holes adjacent to the point of weld. To prevent this flow, ears have been added to the heater platten (Fig. 4)

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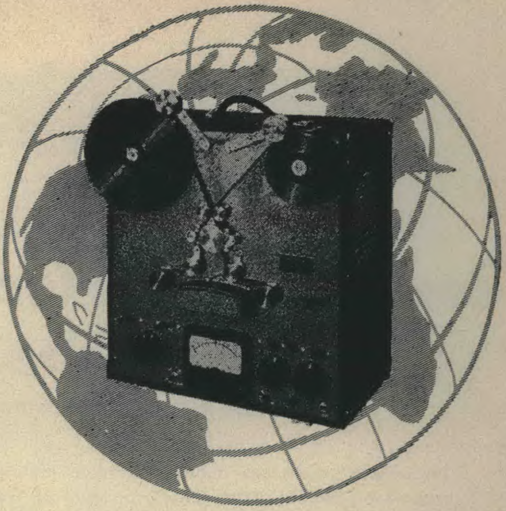

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which are the same size and shape as the sprocket holes in the film, and which extend above the platten 0.006 inch. (These occupy the four sprocket holes of the film and thus prevent the flow of acetate into them.—Ed.)

The acetate, besides flowing sideways, would also flow along the line of heat and out each end were it not restrained by edge-flow plates (Fig. 4) which rest against the banking edge of the film.

When splicing magnetic film, the stationary and movable knife blades are replaced with those made of non-magnetic materials (Fig 5). The same procedure is then followed for splicing magnetic film as that used for picture film. One of the advantages of splicing magnetic film over motion picture film is that the oxide coating of the former does not tend to roll back the few thousandths of an inch which is characteristic with motion picture film.

When the splicer is to be used entirely for 16mm magnetic film, it is advisable to change the location of the film index pins to permit splice to be located between sprocket holes rather than through them. This eliminates the reperforating process.

A magnetic film having no modulation was spliced every 20 feet and then recorded without first erasing or demagnetizing the film. No audible noises

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were noted in the playback. An additional film, having a frequency range of from 30 to 15,000 cycles recorded on it, was spliced in each of the various fixed frequencies. This was checked on RCA equipment with the following results noted:

Frequencies from 1,000 to 15,000 cycles: splice was inaudible or at the same level as that of the normal noise of the material.

Frequencies from 700 to 1,000 cycles: slightly noticeable when the film was run forward or backward in this range.

Frequencies below 700 cycles: inaudible.

Strength tests indicated that the spliced area was equal to 90% of the tensile strength of the film itself.

When 16mm or 35mm standard print stock, having a stripe of magnetic material on the side opposite that of the emulsion, is used, it is necessary to replace the stainless-steel heater platten with a stainless-steel platen coated with Teflon. This prevents the oxide coating on the film from adhering to the heater platen.

The Teflon-coated platen is also used to advantage when splicing color film raw stock. It prevents the anti-halation coating present on coated raw stock from sticking. Later, when using the machine to splice color prints, it has been found that replacing the Teflon

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tape with cellophane tape is advantageous.

Splicing of negative 16mm of 35mm film gives exceptionally gratifying results. When prints are made from spliced areas, no evidence of the splice can be noted. No out-of-focus frames are introduced, and perfect registration of the picture is achieved without the side shift that so often results when the cement method of splicing is used.

To splice raw stock in the dark with the Presto-Splicer, it is necessary to remove the normal viewing lights or to cover them with Wratten filters approved for the stock that is to be spliced. Previously, splicing raw stock has entailed hit-or-miss methods, and one could never be sure that the emulsion at point of splice had been completely scraped off. Because, in the butt-weld method, no scraping or use of cement is involved, it is relatively easy to splice raw stock in the total darkness of a darkroom.

When splicing 16mm raw stock in this way, it is a decided advantage to move the indexing pin of the splicer to the center of the frame in order to avoid having to reperforate in the dark. This method of splicing has been successfully used in darkrooms for processing, eliminating the need for stapling leader stock to "takes."

It is our opinion that butt-weld splicing has many advantages over conventional cement splicing. Splices can be made as rapidly as every 10 seconds and the film used immediately in the darkroom. Now that the motion picture industry generally has changed over to use of safety film, the Prestoseal butt-weld method of splicing can be of invaluable service.

The foregoing article is a condensation of a paper prepared by Leonard A. Herzig, Prestoseal Mfg. Corp., 37-27 33rd St., Long Island City 1, N. Y., and published in the *Journal of the SMPTE* for February, 1953.

THE BIG CHANGEOVER

(Continued from Page 481)

attachments on them. All this meant that special methods had to be devised to hold the anamorphic lenses so they could be mounted properly before the studio's cameras. Before long plans were set in motion to have the anamorphic lens re-designed and mounted in a conventional barrel-like housing. This task was given to Bausch & Lomb Optical Company. Before the end of April, five of the improved CinemaScope camera lenses were delivered to Sol Halprin.

Prior to this, technicians in the studio's camera department spent many nights checking and re-checking the

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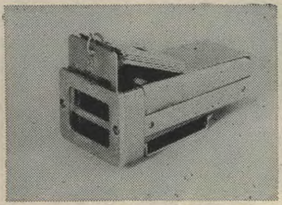

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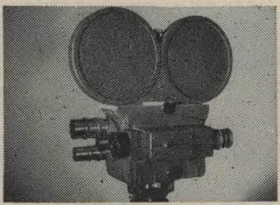

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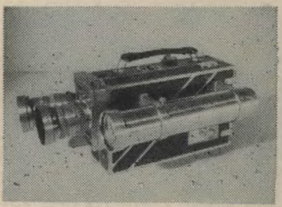

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calibrations on the original two anamorphic lenses that were being used in shooting the initial CinemaScope productions. Special types of telescopes had to be purchased so that the Camera Department could check the lenses for quality of focus and calibrations, to make sure the calibrations were holding up, and at the same time to determine if anything could be done to aid and improve sharpness of focus.

The studio's Camera Precision Machine Shop staff had to go to work immediately building new holders and designing new matte boxes. It had to design means and methods of using the conventional finders of the cameras in order to get the extremely wide-angle view that the anamorphic lens yields; and this all had to be ready in time for use in the photography of three CinemaScope pictures—"Beneath The 12-Mile Reef" having now been added to the schedule of CinemaScope productions.

As difficult and complex seemed the problem of converting to CinemaScope, this was only half the story. CinemaScope had a complementary new feature, sterephonic sound, which in one sense posed a more involved conversion problem to the Sound Department than did CinemaScope to the Camera Department. Whereas the Camera Department was able to use standard photographic equipment in conjunction with the CinemaScope lens, the Sound Department was confronted with the task of redesigning the entire sound recording system to a multiple-track system.

Like CinemaScope, the sound conversion program began early this year. Local directorship of this program was undertaken by Sound Department head Carl Faulkner and sound development technician Lorin Grignon, with the overall sound conversion being supervised by New York technical director Earl Sponable.

First step was the development of a magnetic sound recorder and mixing panel which would handle three or more separate sound channels. Where one track carried all the dialogue before, three individual tracks would now be employed for dialogue. In conventional sound recording, the sound track ran along the edge of the 35mm film strip.

Where would there be room for three or four sound tracks? Here was the answer: It was obvious that there wouldn't be enough room for multiple sound tracks on the film strip as it was. The only variables were the sprocket holes and the picture itself. By cutting down the width of the sprocket holes and by cutting the aspect ratio from 2.66-to-1 to 2.55-to-1, two sound tracks could be placed on either side of both rows of sprocket holes. (See diagram on page 478, this issue.)

Because of the problems involved in multiple photographic sound tracks, it was obvious that magnetic sound recording would be the only feasible method for stereophonic sound release. Now, a practical method for "striping," or laying the several sound tracks on the picture film, had to be devised. The final details of this operation have been worked out, so that highest fidelity magnetic tracks can be placed on the film strip to insure top quality sound reproduction on all tracks.

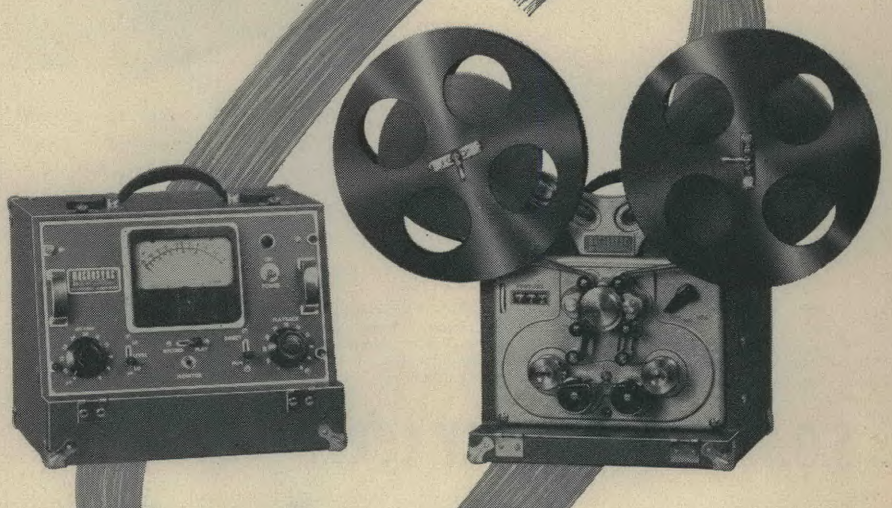
To be sure, there were many things to tackle in the development of a multiple-track sound system. By production necessity, one of the first was the design and construction of a sound recorder, for putting dialogue on three separate tracks simultaneously. The first triple-track recorder designed for recording and playback was seven feet high and weighed 600 pounds. Although it was good from an operational viewpoint, it was impractical because of its great bulk. So the next problem was to put all the components of stereophonic sound recording into a more practical and portable form. This development was carried out swiftly and effectively, the new triple-track recorder being every bit as compact and portable as the former single-track recorder. It was a project which required two and a half weeks of intense research and design, night and day. Yet it represented only a small phase of the Sound Department's job of converting to stereophonic sound. In effect, the entire sound channel (all the equipment necessary to handle the various steps of sound recording and reproduction) had to be rebuilt for stereophonic sound. Not only was this a monumental task, but it was one which had to be accomplished in an amazingly short time, so the new system could be used in the entire CinemaScope program and so theaters could gear for stereophonic sound.

By the nature of the principal involved, the intermediate CinemaScope image is greatly distorted. This fact presented a problem to the film editor, who views all footage in the Moviola in order to edit it. The CinemaScope scenes were squeezed out of proportion to the degree that the cutter was unable to select and match scenes with any degree of accuracy. This meant that some sort of compensating lens would have to be adapted to the Moviola so that the film editor could view scenes in their normal proportion. An additional "fly in the ointment" was the fact that several different types of Moviolas are in use on the lot. Different types of lenses would have to be designed for each type of Moviola. The Precision Machine Shop went to work and developed lucite lenses which, when placed in front of the Moviola viewing area, unsqueezed the picture so it had the normal CinemaScope look. New lenses had to be built for the projection-type Moviolas used by shooting companies for picking and matching action on the set. These were built so that the Moviolas could throw a CinemaScope picture onto a small screen.

Also being built by the Camera Department is any entirely new type of finder which will encompass the wide angle of CinemaScope and will give the cameraman good, clear viewing on the set. The first prototype is nearly completed and will be tested soon.

Camera personnel itself has played a tremendous part in the pioneer work that marked the earliest days of CinemaScope photography. Cameramen, operators and assistants, through their ability and enthusiasm, have mastered a heretofore unknown technique almost overnight.

Since projection is a necessary complement to photography, all of the cam-



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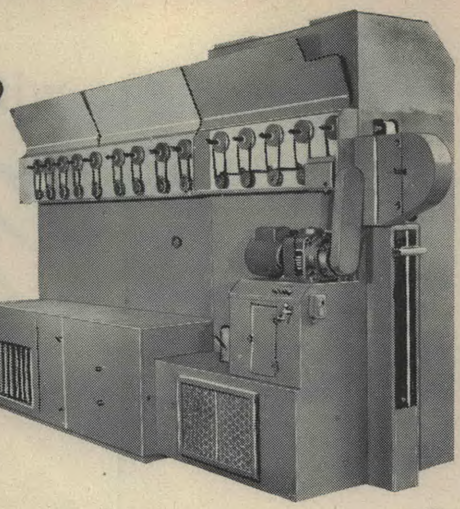

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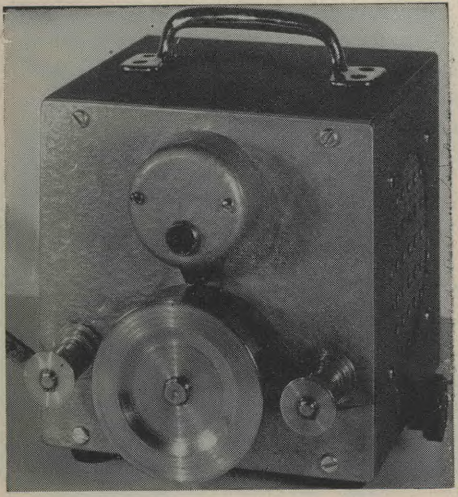

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era changes resulting from the conversion to CinemaScope have been accompanied by changes in projection technique. Most important of these, of course, is the compensating anamorphic lens which, when attached to the projector, returns the squeezed scene to its original proportion. To accommodate the new triple-track sound system, projectors had to be equipped with a new magnetic sound reproduction head. This reproducing head was a development of Earl Sponable and his New York research staff and the sound department.

The installation of new sprockets for exact registration with the new smaller sprocket holes has been completed on several of the studio's projectors.

A 31-foot Miracle Mirror screen has been set up in projection room 1. Projection room 5 has a 22-foot picture and Mr. Zanuck's projection room has a 17-foot picture. Stage 2, which is the new re-recording stage, has a 42-foot picture as well as two special screens on Stage 1 for the Music Department. Projection room 3 has a 26-foot screen and six of the studio's regular projection rooms are being equipped to handle CinemaScope pictures. All projection changes have been supervised by Sol Halprin and Chief Projectionist Bill Weisheit.

Equipment used by the Special Photographic Effects Department under Ray Kellogg and the Optical Printing Department under Jim Gordon have undergone numerous changes. New types of mounts have been built, and many methods have been devised to fit the mounts onto the many types of camera set-ups that these departments employ with the new anamorphic lenses.

The Electrical Production Department has very definitely been affected by the new dimensions of CinemaScope. Naturally, there is little additional lighting problem for outdoor scenes photographed in the new medium. But in the case of large interior sets which had to be lit artificially, there was a problem. The greatly expanded range of the camera equipped with anamorphic lens prevented electricians from moving their lights in as closely as they could in conventional photography. This meant that larger units had to be employed to compensate for the light loss incurred by the greater throw. In addition to this new obstacle, the fact that often in CinemaScope greater areas have to be lighted for larger scenes has put additional requirements on the Electrical Production Department for more and more light.

In one sense, the conversion of the Moviolas used by the Cutting Department has been a problem of the Camera and Sound Departments. But the Film Editorial Department has had many other obstacles to overcome. The single-strip Eastman color film that is used with CinemaScope is a thicker stock than the magnetic sound footage. Since film editors use the double system when editing (picture on one track, sound on another), the problem arose of the picture reel and sound reel being of different sizes. In other words, a 1000-foot reel will hold 1000 feet of sound track but only 800 feet of picture, because of the greater thickness of the latter. This presented a problem wherever the two tracks had to be rewound together. It was solved by employing a clutch on the sound reel to slow it down to the speed of the picture reel.

Many other operating adjustments have had to be made since the first reel of CinemaScope footage reached the cutting rooms. All of these adaptations to the new medium have been accomplished without delay, at minimum cost.

According to Jerry Webb, head of the Cutting Department, CinemaScope has a terrific asset over conventional photography, from the cutter's point of view. The wide range of CinemaScope scenes tends to eliminate over-cutting. The result is a smoother product, with less cuts than were required by the old system.

Contrasting the radical changes that many departments have undergone in the conversion process, a few production departments have had to alter their operating procedure very little due to CinemaScope. For example, supervising art direct Lyle Wheeler reveals that his department has been virtually unaffected by the transition to the CinemaScope process. For instance, the interior tent scenes in "The Robe" were originally designed for conventional photography, yet the set was not altered at all. In the case of larger sets, the shapes have been changel slightly to conform to the new aspect ratio, the emphasis being on width. This change in picture frame proportion is an advantage to the Art Department inasmuch as it eliminates the necessity for many of the matte shots that would have been required in the old system. So the conversion to CinemaScope by the Art Department has been a natural and most advantageous one.

To the director, CinemaScope offers a great new opportunity for expression. No longer will he be limited by the proscenium. Coupled with stereophonic sound, his visual and aural selectivity are greatly augmented.

To the actor, CinemaScope provides a more solid basis on which to display genuine acting ability. By the same token, its requirements of the actor are far greater than were those of the conventional medium. The actor in CinemaScope is often required to do entire scenes without a break, much like the technique employed in stage acting. This means that the actor must memorize more lines and must have a greater

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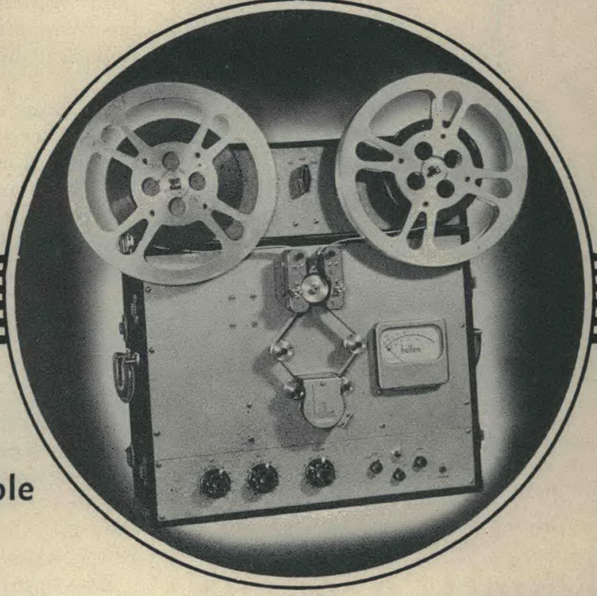

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understanding of the character he is portraying. In repayment for this extra effort, the actor has the satisfaction of "living" his part not fragmentarily but completely, thus yielding a greater performance.

To mention three, six or twenty of the studio's departments in the conversion to CinemaScope would be far from the whole story. For in one way or another, every department and person on the lot has been affected by the introduction of this new medium into production technique. Whether the individual transition has been great or small, it has been an important part of the overall conversion.

To name all the heroes in the story of CinemaScope would be impossible here. It is the result of the combined effort of specialists in many fields, all of whom felt that the challenge of CinemaScope could be met. END.

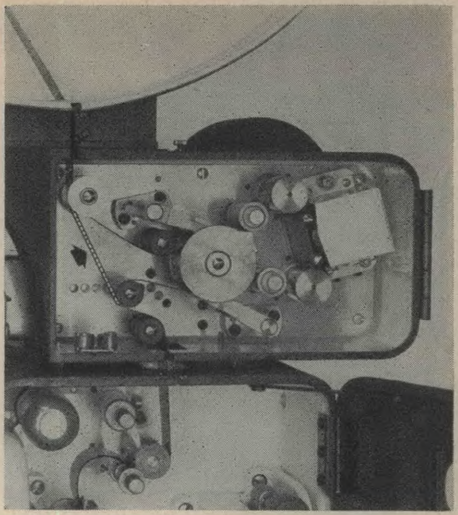
"PENTHOUSE" REPRODUCERS

(Continued from Page 478)

Kinevox, Inc., Magnasync Mfg. Co., Ltd., Westrex, and others are busy supplying the country's movie houses with the new sound heads, in order that they may be prepared to show CinemaScope films.

The "penthouse" sound head becomes a permanent installation, and permits showing of any kind of pictures—two-dimension, three-dimension or wide-screen, and stereophonic sound or ordinary sound. For CinemaScope, the projectionist threads the four-track magnetic sound film through the new "penthouse" head, then continues through the regular picture-gate mechanism as for any type of film, by-passing the ordinary single-track-sound pickup system. (Fig. 3)

For pictures having the ordinary single-track-sound, the projectionist utilizes only the guide rollers of the "penthouse" sound head; he then threads the film through the regular picture-gate mechanism and optical or single-track-sound pickup system as he ordinarily would thread the machine. (See Fig. 4)



WHEN single-track sound films are screened, projectionist utilizes only the guide rollers of the penthouse sound head, threading the film as shown by dotted line and by-passing the four-track reproducing mechanism.

The new type "penthouse" sound heads made by Kinevox, Magnasync and Westrex are pictured in Fig. 1. The Kinevox unit, which is distributed by Natural Sound Corporation, Hollywood, sells for $1425.00 per pair. Rollers and other moving mechanisms are non-magnetic stainless steel. It features tight-loop transport action, oilite bearings, hardened and ground shafts, with all manufacturing tolerances carried to less than one one-thousandth of an inch. Provision has been made to take up extra film length, due to various heights of projector heads, and still keep the required spacing of 28 frames between sound and picture. A four-channel Brush sound head is used. The Kinevox "penthouse" is 9 inches long, 3¾ inches high and has an offset to 6 inches in height and 4⅝ inches in depth. In mounting, the upper film magazine of the projector is raised only 3¾ inches,and thus may be accommodated in the majority of projection booths.

Magnasync Mfg. Company's "penthouse" head is tradenamed "Magnaphonic," and is designed on the popular "Synkinetic" dual-flywheel principle, which was originated by Magnasync engineers. The principle is notable for the use of different mass and inertia in the two flywheels to prevent interaction, and the silicone-packed "clock spring" filter-arm damping mechanism.

The company points out that theatres already having Magnasync 335-T and other separate reproducers can convert to the Magnaphonic 4-track heads at nominal cost. Magnaphonic equipment can be purchased in several alternative packages ranging from the basic reproducers to the complete stereophonic sound system. Prices range from $875 to $4400.

The Westrex R9 Stereophonic Reproducer was developed in Westrex Hollywood laboratories. It utilizes two impedance drums which results in the tight loop desirable for magnetic reproduction; the well-known Davis drive and flutter suppressor; and idler roller adjustable to the length of the film path of different makes of projectors; and a large 32-tooth sprocket which controls the film on both sides of the magnetic head. The unit measures 6¾ inches in height, 13 inches in width, and 6¾ inches in depth. It is a film-pulled mechanism, same as the Kinevox and Magnasync, and does not require any special motor or drive.

Although the "penthouse" four-track sound head development is not directly related to cinematography, it will undoubtedly prove interesting to readers in view of its importance in the steadily changing film production scene. It may well be that it will presage a direct switch to the 20th Century-Fox four track method for other wide-screen and 3-D film productions which include stereophonic sound, from the separate sound track methods presently in use for such films. Film producers will watch future developments with considerable interest.

The entire development marks another stage in the technical advances in sound film that have been brought about by TCF's Earl Sponable and his associates in the last two decades.

"LET ME SEE"

(Continued from Page 483)

camera films had been precluded by the Department's practice of keeping all it's camera equipment uniformly adjusted in order to serve just such emergencies as this.

One major photographic problem was encountered when we found it impractical to use makeup on our large cast of amateur players. Particularly did we run into trouble when we had close shots to film involving, say, a child with its very light complexion, and its father with suntanned face. We compensated for this entirely by lighting, sometimes using a separate light source, tightly goboed, for each individual, and with the light on the parent carefully scrimmed.

We used Commercial Kodachrome film entirely. In our exterior shots, reflectors were used for fill light. Once when shooting an important exterior, we ran into a multiple problem of Los Angeles "smog," and deep shade from a large tree. We never were quite able to match the color in this shot with that of the rest of the picture, although the difference in the final print is quite small.

As in professional studio production, the next stages of our operation involved film processing, which was handled by Eastman Kodak. Company's Hollywood laboratories; re-recording our magnetic sound to optical tracks, which we accomplished using our Auricon recorder; and duping the release print in our film laboratory. Our laboratory, which cost $35,000 and which at one time was considered the model 16mm film laboratory in the United States, was designed by Sidney Solow, head of Con-

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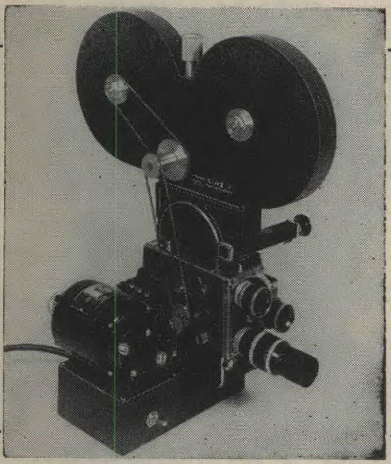

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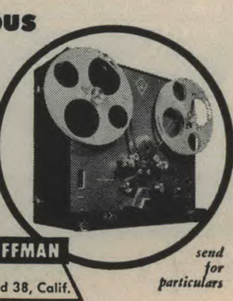

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The University's Department of Cinema has perhaps the most complete equipment of any collegiate cinema department. The sound stages were designed and built entirely by students and faculty members following the most advanced methods presently in use in the major studios. The sound recording studio was built and all equipment installed by the instructor in charge. Here are regular studio as well as portable Stancil-Hoffman magnetic film recorders complete with necessary mixing panels, microphones and cables, and complete re-recording equipment.

The department's prize piece of photographic equipment, of course, is the Mitchell "16" camera. Additional cameras include three Cine Specials, twelve Bell & Howell 70-DL's, and several Bolex H-16's.

When we were presented with the award for this picture by Carey Wilson of the Screen Producers Guild, I think something or other was said about the crew deserving credit for the pitcure's success. Actually, this statement wasn't necessary, for the film speaks for itself in this regard. This was a film that from start to finish depended entirely on complete cooperation and sincere enthusiasm from all concerned with its production.

"Let Me See" was not the only film with which the department was concerned last year. No less than twenty films were in some stage of production while we were shooting. This offered many problems of studio management and utilization of equipment and stage facilities. For example, one of us was at work preparing a film for the American Heart Association—a three-reeler now being edited; the other was putting the final touches on a script for a psychological problem film now up for possible production.

The films we make at USC serve a three-fold purpose: They all have an educational function (many are sponsored); they teach us how to make films under actual production conditions; and most important, they are the showcase for our work.

And what about the students who work together to make these films? Most of us go into documentary and educational film production. END

SHOOTING A ROYAL AIR FORCE TRAINING FILM

(Continued from Page 479)

crashes, they will naturally ask themselves, "What would I have done in his place?"

The film then shows the right thing to do, starting with diagram sequences which explain how the emergency service operates.

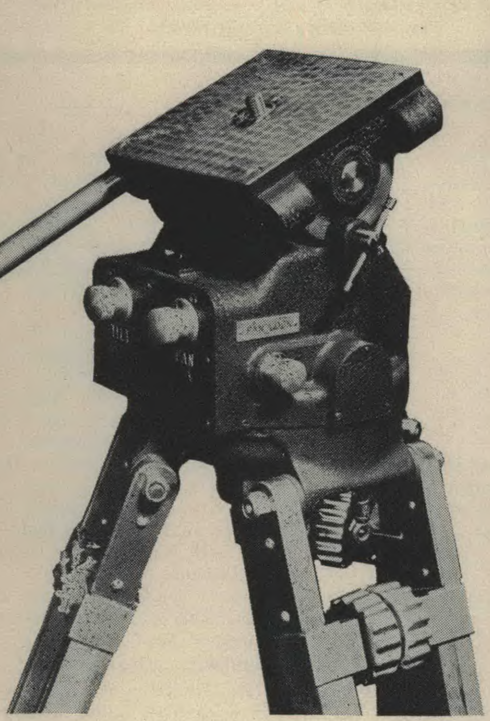
A problem in shooting this film was the aerial photography. As an aircraft is most likely to get into difficulties in bad weather, many aerial scenes were purposely shot in cloud and bad visibility to create the proper atmosphere.

No jet aircraft capable of accommodating a motion picture camera and operators were available to us, so aerial filming was done from a war-time Lancaster. The maximum speed of this aircraft is only about 200 knots, and to minimize vibration the actual flying speed was kept down to 180 knots. The Meteor jet fighter used as the subject in the film *could* fly as slowly as 180 knots—but no less—and at that low speed, the attitude of the plane is wrong. The nose is higher than it would be in normal flight. Whenever the horizon was not seen, therefore, the camera was tilted slightly to compensate for this. To film long shots, with the horizon visible, both the Lancaster and the Meteor were maneuvered into shallow dives.

The door of the Lancaster was removed and a Newman-Sinclair spring-driven camera mounted behind the opening. Sections of automobile tires placed under the tripod legs insulated the camera from the vibrations of the aircraft.

The Newman-Sinclair holds only 200 feet of film, so a signaling device insured that the Meteor pilot carried out the required actions well within the limits of the 2 minutes running time available. This device consisted of a push-button on the front of the camera, connected to a signal light near the Lancaster pilot. If the Meteor were required to break formation or carry out any other maneuver in the middle of a shot, the Lancaster pilot would call the Meteor immeditately the signal light flashed. In practice, the time which elapsed between pressing the signal button and the Meteor taking the required action, was only 2 to 4 seconds.

It was difficult to film convincingly the Meteor flying in cloud. If the cloud was too thick, the two aircraft lost sight of each other and were forced to break formation. At other times the Meteor merely appeared motionless against a plain white background—not exactly the most photogenic type of shot. The best effect was obtained by the Meteor flying just above the cloud tops or just



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below the cloud base, provided there was plenty more cloud above or below.

Closeups of the pilot to cut in with flying shots are normally filmed convincingly in the studio by back-projection, but this was too costly for a short training film. Nevertheless, these shots were made satisfactorily outdoors by only shooting when there were no clouds to reveal the fact that the aircraft was stationary. For sunlit scenes, we waited for a cloudless blue sky, while for scenes in or below cloud a flat dull sky was the answer. In addition, all shots of the pilot in the cockpit, with the exception of big closeups, were filmed with the camera tracking either in or away from him, thus helping to maintain the illusion that the aircraft was actually in flight.

Here, reflections from the curved plastic cockpit hood often proved disturbing. Therefore the craft was turned to a position where only a flat horizon with no buildings could be seen reflected from the hood. While shooting the first of these scenes, it seemed that even these reflctions would spoil the shot because the green of fields was very obvious; but filmed in black-and-white and with the horizon slightly out of focus, the reflections were completely unrecognizable and might easily have come from the wings of the craft itself.

The air crash in the opening sequence proved difficult to shoot. The build-up sequences were, of course, easy enough, viz.:

Longshot — Aircraft coming down through cloud,

Closeup—Pilot's face looking anxiously around,

Big closeups of fuel gauges,

Longshot—Aircraft flying low, and finally — it's disappearance behind a clump of trees.

But the sequence had to end with an actual wreck. To destroy an aircraft specially for a short training film was, naturally, out of the question. About five such films could be made for the cost of one Meteor! Neither would a model be likely to convince the critical audiences for which the film was intended. However, large numbers of Meteors fly daily over the British Isles and inevitably there are genuine accidents. But we had a long wait . . . It was only after all other scenes had been shot and the film almost ready for dubbing that we located a suitable crash and got our camera on the spot, at the other end of England, before the wreckage was cleared up. END.

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Current Assignments of A.S.C. Members

Major film productions on which members of the American Society of Cinematographers were engaged as directors of photography during the past month.

AMERICAN SOCIETY OF CINEMATOGRAPHERS

FOUNDED January 8, 1919, The American Society of Cinematographers is composed of the leading directors of photography in the Hollywood motion picture studios. Its membership also includes nonresident cinematographers and cinematographers in foreign lands. Membership is by invitation only.

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ALLIED ARTISTS

- Harry Neumann, "Dragonfly Squadron," (3-D), with J. Hodiak and B. Britton. Lesley Selander, director.
- Harry Neumann, "Bomba and the Green Idol," Ford Beebe, director.
- Ellis Carter, "Arrow In The Dust," with Sterling Hayden, Lesley Selander, Dir.

COLUMBIA

- Henry Freulich, "The Kiss and the Sword," (Technicolor) Richard Castle, dir.

METRO-GOLDWYN-MAYER

- Joseph Ruttenberg, "Miss Baker's Dozen," (Ansco Color) with Greer Garson, Robert Ryan, Robert Z. Leonard, director.
- Paul C. Vogel, "Rose Marie," (Technicolor, CinemaScope) with Ann Blyth, F. Lamas, H. Keel, Mervyn LeRoy, director.
- George Folsey, "Executive Suite," (Wide Screen) with W. Holden, J. Allyson, B. Stanwyck. Robert Wise, director.

REPUBLIC

- Jack Russell, "Hell's Half Acre," with Wendell Corey, Evelyn Keyes, Marie Windsor. John H. Auer, producer-director.

R.K.O.-RADIO

- William Snyder, "Rangers of the North," (3-D, Technicolor) with Victor Mature, Piper Laurie, W. Bendix. Louis King, director.

20TH CENTURY-FOX

- Lucien Ballard, "Prince Valiant," (Technicolor, CinemaScope) with Robert Wagner, Janet Leigh, Debra Paget. Henry Hathaway, director.
- Charles G. Clarke, "Night People," (Technicolor, CinemaScope) (Shooting in Germany) with Gregory Peck, Rita Gam. Nunnally Johnson, producer-director.
- Harold Lipstein, "Three Young Texans," (Panoramic Prod.) (Technicolor Wide-screen) with M. Gaynor, K. Brasselle, and J. Hunter. Henry Levin, director.
- Leo Tover, "Man In The Attic," (Panoramic Prods.) (Wide-screen) with J. Palance, C. Smith. Hugo Fregonese, director.
- Milton Krasner, "We Believe In Love," (Technicolor, CinemaScope) with Clifton Webb, Jean Peters, Jean Negulesco, director.
- Edward Cronjager, "Gatling Gun," (Panoramic Prods.) with Van Johnson, Joanne Dru. Rudy Mate, director.
- Lloyd Ahern, "Gorilla At Large," (Panoramic Prods.) with Cameron Mitchell, Ann Bancroft. Harmon Jones, director.

UNIVERSAL-INTERNATIONAL

- John Seitz, "Saskatchewan," (Technicolor, Wide-screen) with Alan Ladd, Shelly Winters. Raoul Walsh, director.
- Carl Guthrie, "Yankee Pasha," (Technicolor, Wide-screen) with Jeff Chandler, Rhonda Fleming. Joseph Pevney, director.
- William Daniels, "The Far Country," (Technicolor, Wide-creen) with James Stewart, Ruth Roman. Anthony Mann, director.
- Maury Gertsman, "Fort Laramie," (Technicolor, Wide-screen) with John Payne, Mari Blanchard. Jesse Hibbs, director.
- Carl Guthrie, "Johnny Dark," (Tech., W-screen) with T. Curtis. G. Sherman, dir.
- Russell Metty, "Magnificent Obsession," with J. Wyman. Douglas Sirk, director.

WARNER BROTHERS

- Wilfrid Cline, "Rear Guard, (3-D, War. Col.) with G. Madison. David Butler, dir.
- Robert Burks, "Dial M For Murder," (3-D, War. Col.) Ray Milland. A. Hitchcock, director.
- Pev Marley, "Phantom Ape," (3-D), with K. Malden. Roy Del Ruth, director.
- Sidney Hickox, "Them," (3-D, War. Col.) Gordon Douglas, director.

INDEPENDENT

- Cliff Stine, "Americano," (Eastman Color, Wide-screen). Budd Boetticher, dir.
- Lester White, "Silver Dollar," (Cin.Col) (Wide-screen). Fred Sears, director.

TELEVISION

(The following directors of photography were active last month in photographing films for television, or were on contract to direct the photography of television films for the producers named.)

- Lucien Andriot, "Life of Riley" show, Hal Roach.
- Norbert Brodine, "Crown Theatre," Bing Crosby Enterprises.
- Dan Clark, "Favorite Story," Ziv TV.
- Edward Colman, "Dragnet," Mark VII Prods.

- Robert DeGrasse, "Make Room For Daddy," D.P.I. and Marterto Prods., Inc.
- George Diskant, "Four Star Playhouse," Four Star Prods.
- Karl Freund, "I Love Lucy," Desilu Prods.
- Fred Gately, "The Big Town," Gross-Krasne Productions.
- Benjamine H. Kline, "Fireside Theatre," Frank Wisbar Productions.
- Hal Mohr, "The Joan Davis Show," Joan Davis Productions.
- William Mellor, "Adventures of Ozzie and Harriett," Stage 5 Productions.
- Ernest Miller, "Hopalong Cassidy," William Boyd Productions.
- Virgil Miller, "You Bet Your Life," (the Groucho Marx Show), Filmcraft Productions.
- Kenneth Peach, "Ramar of the Jungle," Arrow Productions.
- Robert Pittack, "Cavalcade of America," Jack Chertok Productions.
- Walter Strenge, "My Little Margie," Roland Reed Productions.
- Mack Stengler, "The Liberace Show," Snader Telescription Corporation.
- Harold Stine, "Superman," Superman, Inc.
- Phillip Tannura, "The Burns and Allen Show," McCadden Corporation.
- Stuart Thompson, "Your Jeweler's Showcase," Sovereign Productions.
- Gilbert Warrenton, "Chevron Theatre," Revue Productions.

VARISCOPE LENS

(Continued from Page 484)

The tremendous success of "The Robe" is certain to set the style for ultra-wide, panoramic type movies. With Variscope, an exhibitor can give panoramic screen treatment to a great many of the films which are now being released by all studios, providing he has the theatre and screen for it. And where these pictures have stereophonic sound, the exhibitor is in position to more successfully meet the competition of CinemaScope films—or, when showing a CinemaScope feature himself, to bring other non-CinemaScope films on the same program up to comparable screen size.

An interesting sidelight on the development of the Variscope lens is the fact it "was born about ten years too soon," according to Young. Years ago, long before the advent of wide-screen movies, Young developed the basic idea for his lens, but didn't know what to do with it. His original Variscope (actually it had not yet been so named) was stored, and it remained almost forgotten until recently when the furor of 3-D and wide-screen movies suddenly electrified the technical staffs of all studios. As Young worked with his MGM associates in developing the studio's 3-D and wide-screen processes, he saw the possibilities his zoom-type projection lens held in the new order of film making. He renewed research and development on the lens, and recently the prototype Variscope was

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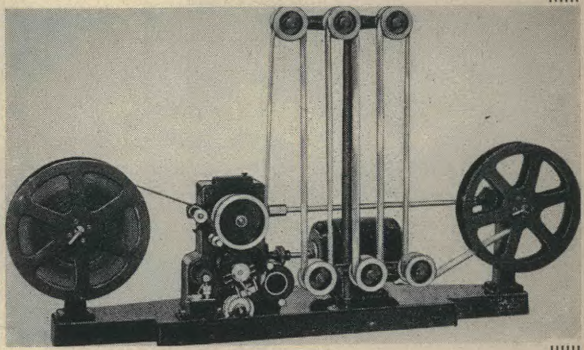

This non-intermittent unit has an automatic metal numbering block, prints black or yellow. Film passes over drying rollers before being rewound — Central lubrication, 2000′ capacity, speed 50′ per minute.
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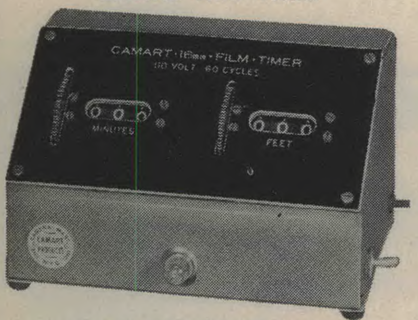

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demonstrated and pronounced highly successful.

The Variscope is now in production by Pacific Optical Corp., Los Angeles. Sale and distribution is to be handled by National Theatre Supply Company, with Young drawing royalties from sales. MGM will not share in the profits in any way. The studio, notable for its efforts in aiding the nation's small film exhibitors, many of whom have been hard hit in the transitional period of wide-screen movies, is elated that this important exhibitor aid was developed at MGM. Officials see in it great new possibilities for the theatre owner. Not every movie house can equip for CinemaScope; but all can now show pictures in any one of the newer wide-screen formats, thanks to the Variscope lens attachment.

For the industry, and particularly its cameramen, the advent of the Variscope holds much promise. It means the producer of non-anamorphic type movies will be better able to compete with CinemaScope productions. The result may well be an early resurgence of wide-screen and 3-D film production, now somewhat curtailed, with consequent increasing assignments for cinematographers. Many of these men, incidentally, see in the Variscope a remarkable new projection tool that gives new scope and luster to their camera work.

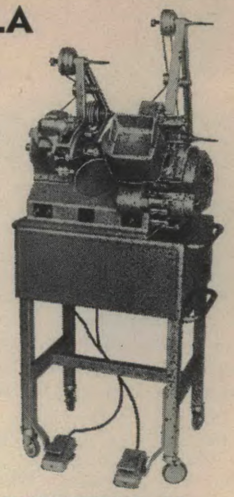
PAN CINOR LENS

(Continued from Page 491)

eraman in a recent issue of the *Bolex Reporter*. Said Pennington: "One of the major problems confronting the small producer of motion picture films is his lack of facilities for camera movements. Panning the camera can be done with most any reasonably good tripod, but a dolly shot becomes extremely difficult except under the most exacting conditions. Dolly shots in the field can just about be written off as impossible, and even in the small studio many 'takes' must usually be made to get the desired smoothness in a dolly shot.

"The Pan Cinor lens completely solves this entire problem. The zoom action is smooth, either fast or slow. We find in practice the pictures made with the Pan Cinor are consistently as sharp as those filmed with the best available fixed focal-length lenses. Also the pictures are uniform in exposure and sharp over the entire area of the screen—all the way out to the corners and at any distance.

"Another problem often encountered in the field is to find a position for the camera exactly where you want it. A



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river, street, fence, runway, or people may be in the way. With the Pan Cinor the camera can be placed almost any reasonable distance from the subject so long as it is the angle wanted, and the focal length of the lens changed to take the exact picture wanted. You don't have to zoom the lens in every case.

"At first the Pan Cinor lens seemed tremendous but we soon found out it is not heavy or awkward in any way, nor does it require any unusual care. We are using this lens almost exclusively for our work in 16mm television, industrial and promotion films, both black-and-white and color. The only difficulty we have found is resisting the temptation to zoom every shot."

It should be pointed out that the use of filters, polarizing screens and diffusion discs is the same with the Pan Cinor as with ordinary lenses. Series VIII filters may be used, and two close-up lenses are available—one for distances between 60 and 30 inches, and another having a focal length of .75mm for distances between 30 and 20 inches.

SIMPLIFIED SINGLE-FILM SYSTEM FOR 3-D

(Continued from Page 485)

for permanent in-the-booth installation and the other for mounting outside the booth in front of the projector porthole, as shown in Fig 1. In use, the regular projector lens is eliminated and the projection lens of the Nord equipment is used. In projection, the film images are rotated 90°. Width and position of the sound track remains the same as for conventional or 2-D films.

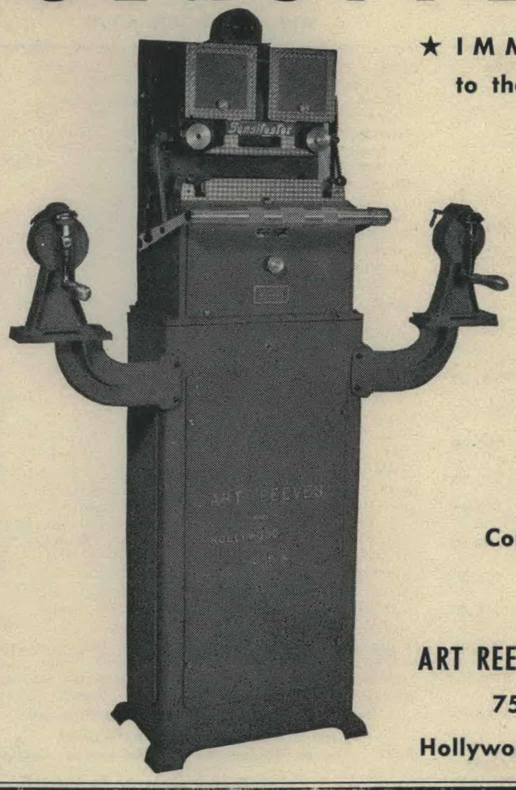
The natural conclusion is to assume that by putting two images on a single frame of 35mm film, the images are reduced to just ½ that of a standard 2-D film frame. Roy Clapp explains why this isn't so:

"First we utilize the full silent picture frame area, minus the sound track area. By printing the images in the 1.75 to 1 wide-screen format, they fit perfectly into a single frame, as shown in Fig. 2, and the pitcure area used is just ⅞ths that of 1.75 to 1 pictures now printed in the conventional manner."

Acceptance of the Nord System must begin with the film producers themselves. Once the studios agree to print their 3-D features for Nord projection, it follows that an increasing number of theatres throughout the country will equip to show 3-D pictures by this method. The initial cost of equipment, said to be quite reasonable, will readily be recouped by consequent savings in booth operation, say Nord engineers.

Last month, Columbia Pictures Corporation became the first studio to complete arrangements to untilize the Nord System of single-strip 3-D film printing and projection. Following a series of meetings and demonstrations between Columbia Studio executives and Nord company representatives, the studio agreed to make immediately available to any exhibitor who so requests it prints in the Nord System of any of the studio's films which have been made to date, or which are to be made in 3-D.

Roy Clapp, who invented the Nord System, has been an expert on stereoptics for 25 years. He holds numerous patents, and has applied for patents on his new process. Associates with him are Harry Rathner of Minneapolis, and Nathan Supak, also of Minneapolis.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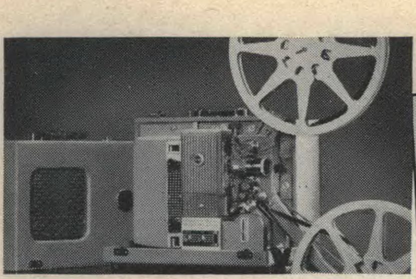

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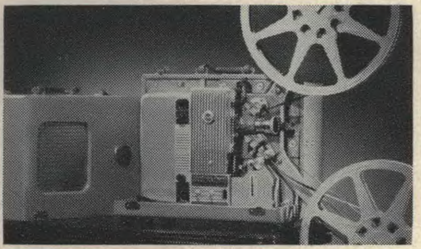

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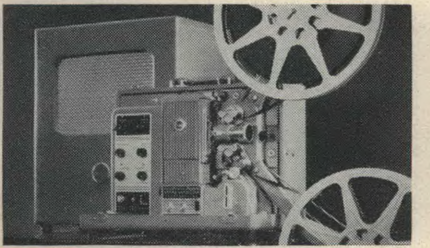

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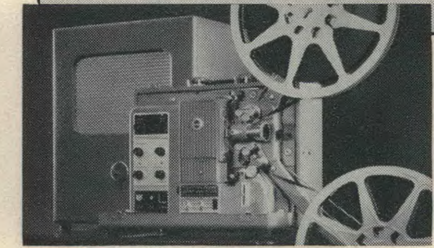

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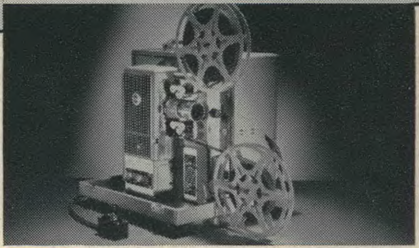

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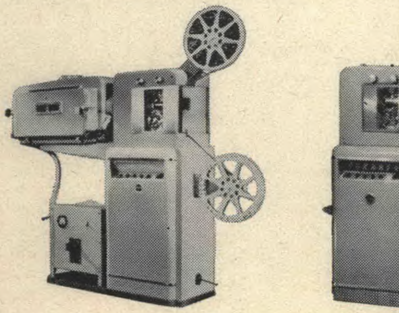

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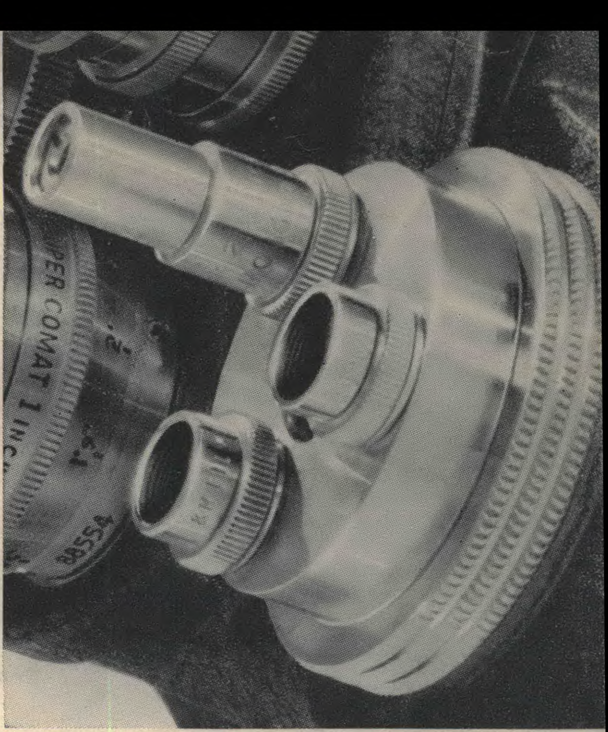

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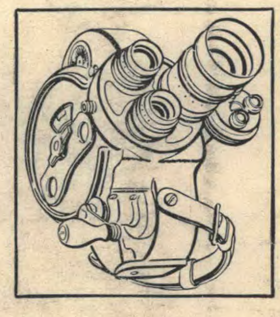

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